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THE URGENT NEED FOR DOCTORS

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Federal Security Administrator
WASHINGTON, D. C.

Long before Pearl Harbor the American Medical Association established a Committee on Medical Preparedness. Long before America as a whole was ready for the total mobilization of its manpower, your committee undertook a census of physicians and visualized a plan for matching physicians to the needs of a nation at war.

The Procurement and Assignment Service was established at the suggestion of the American Medical Association. Your association it was that worked out with the Selective Service authorities the plan for deferment of medical students and interns. Largely through your help medical education has been adjusting itself to war needs.

I need not call the roll further. I need not cite your collaboration with the Office of Scientific Research and Development and the National Research Council and many other professional groups. Through THE JOURNAL you know the work that your association has done. But it is my privilege to have worked with you and my pleasure to congratulate you on your vigorous action. No other part of the total manpower job is so well blueprinted today as is the mobilization of medical service.

It is fundamental that I acknowledge the work you have done, for I am about to deliver a very serious speech. Whatever the physical circumstances may be, it is not the kind of speech usually thought of as an "after dinner speech."

This is war. And war has brought to every American obligations so heavy that we have not yet realized the fundamental sacrifices that we must make.

In every walk of life manpower needs are being studied. Every American will be called on to do whatever is necessary to achieve victory.

America has selected your sons and your neighbors' sons for service with a citizen army. That army is fighting beyond the seven seas in order that America may be quite certain that we shall never have to fight on our own beaches. To establish the security of the American Way, we are risking the lives of our young men for victory.

And I need hardly tell you that no limitations of convenience or economic interest shall stand in the way of giving them full and complete support at home. That is a commitment from us to every man in the military forces—a commitment which was implicit in his enlistment or selection.

In determining what is necessary we are now engaged in the total "diagnosis" of America's manpower needs.

And when the "diagnosis" is complete, the "treatment" of each worker and the disposition of each case will be based on our best and most objective analysis of the facts.

No labels will stand in the way. No a priori theories of political or economic organization can stand in the way of effective action. Those principles which support effective action will stand. Any others will have to suffer a moratorium.

In doing that we are taking a leaf from modern medicine. You probably still know among your colleagues —as I do not—certain cloisters of the mind which limit their objectivity, but in general the old barriers of doctrine—the homeopaths versus the allopaths—have passed away. As T. V. Smith has put it, these "paths, like the paths of glory, lead only to the grave." No obstructive hedge of theory must stand between the patient and the doctor's best professional skill.

This is war. We are out of the cloisters of words. We must look squarely at the facts. Let me describe some of the symptoms of our case on June 8, 1942.

Let me present them simply in terms of a series of hard, unpalatable facts. Whatever the state of other skills, professional and otherwise, in the reservoir of America's manpower yours is a profession which can face the facts.

1. We are not getting enough volunteers. We are not getting as many volunteers as the Procurement and Assignment Service expected we would have by this time. It is absolutely necessary that there is an immediate and significant increase in the number of volunteers, or else some other method of procurement will be required soon.

Slightly more than 3,000 physicians, who were not obligated by reserve commissions, volunteered in the first six months of this war. By contrast, 12,000 volunteered in the first six months of the last war.

An army of 9 million will take 12 per cent of our male population. Present medical corps ratios indicate that the armed forces will require 33 per cent of all our physicians (including retired men)—two-thirds of all those under the age of 45.

Several thousand physicians are needed by July 1, and more physicians must be drawn into the service in the next six or seven months than the 22,000 taken during the past eighteen months. Another 10,000 will be needed in 1943.

Some states are ahead of their reasonable and expected quotas. Others are from hundreds to thou-

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sands behind their quotas. There is evidence that there are still some areas in America which have not yet fully discovered the war.

This is no statement of opinion. This is a statement of some very hard facts. I deliver them without the slightest hint of bedside manner for your earnest consideration.

2. And remember this: The Army and Navy are not the whole story. There is yet far too little consciousness of any problem beyond that of obtaining physicians for the Army and Navy. The acute need for civilian service is not yet appreciated. There will be no "business as usual" for physicians at home—any more than there can be for the physicians in the military service.

The American Medical Association's Council on Industrial Health and Dr. Selby's Committee on Industrial Hygiene, Health and Medicine have aided in the establishment of many industrial medical services. They have helped to create educational programs to train physicians for such services.

But for the most part that development has been directed to large plants. There is no well recognized plan as yet for the small plant. The more general recommendation of "cooperation with local practitioners" is not enough. It has not produced results.

And as industrial physicians have so often reminded the people, industrial health does not begin and end at the factory gates. Home and community sickness cost America more man-days in time lost than do occupational accidents and occupational illnesses. The home and the community, therefore, cannot go unserved in wartime.

Dr. Lahey and Dr. Abell, and those who appreciate the great responsibility of American medicine, know and understand these needs. It is time, I think, for a concerted drive to bring home to every doctor the importance of the local civilian problems of medical care in boom areas—a drive that will bring the necessary action.

Let me underscore the need for doctors in industrial areas and in defense boom towns. The community that is growing, as some communities have, from a rambling rural village of a thousand people to a town of 30,000 and 40,000 or 50,000, must be taken care of. Doctors will have to be assigned to those towns on a voluntary basis or on some other basis.

3. There is and there will be a growing problem of rehabilitation. Mechanized warfare means more casualties, despite all physicians and engineers can do. Perhaps there will be fewer deaths but more mashed fingers, injured arms, crippled legs.

With mechanized equipment the industrial process is multiplied manifold. With high pressure production accident rates go up. Thus, added to our training and our battle front casualties, there will be a vast increase in industrial casualties.

The casualty prospect adds to the acuteness of our need for doctors in the military forces. It adds greatly to our need for doctors on the industrial front. And there is the added responsibility for rehabilitation which arises out of the nature of total war. We need every man-hour on the production line—and therefore we need every man-hour of medical service.

We face a sad prospect. Total war has made a fundamental change in our attitude toward the disabled. We can no longer regard rehabilitation as a humanitarian or "welfare" measure designed to salvage self respect or provide incidental income for the disabled individual He is a person—a valuable person. He must be rehabilitated and vocationally trained not merely for his own good but because the nation needs him. He must be vocationally trained not in some obscure handicraft the products of which are intended for Fifth Avenue shops or roadside tourist stands but in skills that will fit him for a place in the main stream of American production. Industry must not disqualify him for his disabilities; it must qualify him for his abilities.

Thus the rehabilitation problem includes not only the rehabilitation of rejectees but the rehabilitation of men who suffer their disability because they served their country in the military service or on the production line.

4. A total systematic plan is necessary to meet these needs. Manpower must be conserved now.

But I think the situation presents to the American medical profession an opportunity. You are familiar with the advances in clinical medicine which came out of the last war. You know the advances in bone surgery and plastic surgery and in the care of wounds. You know full well the height to which your profession rose under the terrible pressure of war. You are faced with even greater and more challenging problems now. You will rise to new heights, which will be all the higher because in this last quarter of a century you have developed so beautifully in medical education and scientific research.

In addition, however, to your problem of the last war you face the acute social problem presented by total war. There must be no break anywhere in the fabric of our national effort. Those breaks come only when America's fundamental resources, the health and vitality of its people, break down.

Just as clinical medicine progressed in 1917-1918, this time America can look forward to your firmer mastery of the management of its medical services. I hold no brief for any a priori plan. I hold a brief only for the application of the same scientific objectivity to problems of the organization and distribution of medical services as they are applied to clinical questions.

That will serve to outline America's main problem. Here are some of the prescriptions which are indicated.

1. For the military services younger men must go. They must realize their duty now. The armed forces need thousands of young doctors immediately—to be exact, 5,000 by July 1, 20,000 during the next seven months.

They must make whatever arrangements are necessary for their older associates to handle their practices. The older men in turn must remember that they had their chance last time. They not only must stay but must extend the scope of their activities to meet the medical needs of the civilian communities.

2. The medical profession must cooperate in every local community as vigorously as your national organization is now cooperating. It must obtain physicians in sufficient numbers for the Army and Navy. It can also take action to allocate men to important positions in industry and in civilian life. Having accomplished those two important military duties, the profession should certainly have no fear of any drastic change in medical practice after the war.

3. Let me make this clear. The Procurement and Assignment Service for the War Emergency was set up in collaboration with the medical profession to facilitate the channeling of physicians to military and civilian service. It will not continue after the war. "All out" collaboration does not involve any theoretical assaults on, or support of, any theory of medical practice.

The Procurement and Assignment Service, with which every physician should and must collaborate to the full, is staffed by physicians, guided by physicians and represents every one of you in the worldwide application of the simple but profound obligations of the Hippocratic oath.

There was nothing of theory in the establishment of the Procurement and Assignment Service. It was a proposal to solve in a practical manner a problem of great urgency. It was not imposed by the government. It was set up, I repeat, at the suggestion of your profession. It investigated all aspects of the problem of providing doctors in an equitable way for military and civilian service. It made the arrangements with Selective Service for the deferment of medical students. It has safeguarded your professional interest in every way.

At the same time, it has accepted the obligation to deliver the doctors that the nation needs to the points at which they are needed.

Now let us look at the record.

The plain fact and conclusion is simply this: The Army and Navy and the war industry areas have not gotten the doctors they need. The careful safeguards that were set up by the Procurement and Assignment Service have apparently slowed down the rate of recruitment. The voluntary plan must work and work promptly—or some other more vigorous plan will have to be produced.

Yours has been an outstanding effort in canvassing and classifying every member of your profession. You have still in your hands the machinery by which a self-governing profession can demonstrate its ability to meet the tremendous demands of total war. And I appeal to you to make that machinery work.

Yours is an important profession. It is the first to require rationing—rationing which will make sure that there are enough doctors to meet the needs of every unit of the home front and of the battle front. The issue is who shall do the rationing, for America must have the doctors it needs.

General Practice Requires Brilliant Men.—There is an idea abroad that medical men drift into general practice because there is no place for them anywhere else. This idea should be disabused. Only brilliant men should go into general practice. In no other field of medicine is competition so keen and in no other field of medicine are the keenest mental qualities required for success. The sphere of general practice is not the place for mental or physical weaklings. In it you work amongst the people. They know you personally. Your mistakes are made public and are discussed by all. The general practitioner's mistakes are not hidden under a bundle of pathological and x-ray reports but are discussed in the local public house and at the church on Sunday. It will not bring big financial success, but it brings better things. It brings friendships which are lifelong. No other branch of the profession gives such a full life—a life full of real living and of service. Therefore, if you decide to take up general practice, do so with the knowledge that there the greatest field for service as a doctor is open to you.—McCann, J. J.: The General Practitioner Looks at Medicine, *Irish J. M. Sc.*, June 1941.

HIGH FAT DIET PRECEDING CHOLECYSTOGRAPHY

A REVIEW OF THE LITERATURE AND EXPERIMENTAL STUDIES ON FILLING THE NORMAL GALLBLADDER

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Eighteen years have elapsed since Graham and Cole [1] first reported the use of tetrabromophenolphthalein sodium, by intravenous injection, in the examination of the gallbladder. This added impetus to the study of the liver and biliary apparatus which not only increased the accuracy of diagnosis of pathologic conditions but greatly increased our knowledge of the physiology of these organs.

The interpretation of roentgenograms in which the gallbladder shows only a faint or no shadow has, from the beginning, been unsatisfactory. As early as 1925 Stewart and Ryan [2] concluded, after a series of experimental observations, that the question of "no shadow" needed further study. They gave five reasons why the gallbladder might give no shadow on roentgen examination. Others have since added to this list. Considering only those conditions which might interfere with the proper filling of the normal gallbladder I suggest the following:

1. Failure of absorption from the gastrointestinal tract of an adequate amount of the opaque medium.
2. Failure of the liver to excrete the dye into the biliary passages.
3. Pressure on the cystic duct.
4. Gallbladder already filled with bile to the exclusion of an adequate amount of fresh dye laden bile.
5. Reflexes from the cecum, colon or other part of the gastrointestinal tract.
6. Premature emptying of the gallbladder.

LITERATURE

A sizable literature has accumulated pertaining to the influence of the aforementioned factors in filling of the gallbladder. Brief reference will be made to only a few of the most pertinent studies which have appeared since the introduction of opaque mediums in cholecystographic examinations.

Absorption.—The gallbladder shadow will depend not only on the size of the dose but on the amount retained for a period long enough to permit maximum absorption. Graham, Cole and Copher,[3] using the intravenous method, gave 3.5 Gm. of tetrabromophenolphthalein. This has come to be the average dose of soluble iodophthalein when given by mouth. Sosman, Whitaker and Edson,[4] by intravenous injection of soluble iodophthalein, gave 0.04 Gm. per kilogram of body weight. Stewart and Ryan,[2] using an Einhorn tube, instilled 40 grains (2.6 Gm.) directly

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1. Graham, E. A., and Cole, W. H.: A Preliminary Report on the Roentgenographic Examination of the Gallbladder, J. A. M. A. **82**: 613 (Feb. 23) 1924.

2. Stewart, William H., and Ryan, Eric J.: Further Development in the Jejunal and Oral Administration of Tetraiodophenolphthalein, Am. J. Roentgenol. **14**: 504, 1925.

3. Graham, E. A.; Cole, W. H., and Copher, G. H.: Cholecystography: Its Development and Application, Am. J. Roentgenol. **14**: 487, 1925.

4. Sosman, M. C.; Whitaker, L. R., and Edson, P. J.: Clinical and Experimental Cholecystography, Am. J. Roentgenol. **14**: 495, 1925.

into the duodenum. Menees and Robinson,[5] the first to use tetrabromophenolphthalein by mouth, gave 0.05 Gm. per kilogram of body weight. They stated that satisfactory shadows could be obtained with only 0.03 Gm. but that it was better to have an excess to compensate for poor absorption. The following doses are all for soluble iodophthalein given orally. Stewart and Ryan[2] gave 40 grains for 150 pounds (68 Kg.) of body weight. One patient showed an excellent shadow after only 15 grains (1 Gm.). They thought that in general the doses used were too large. Sosman, Whitaker and Edson[4] gave 5 grains (0.32 Gm.) for each 10 to 12 pounds (4.5 to 5.4 Kg.) of body weight. Kirklin[6] gave 4 Gm. regardless of weight. The Friedmans[7] administered, in multiple doses, from 6 Gm. for patients under 100 pounds (45 Kg.) up to 12 Gm. for patients over 150 pounds. Whitaker[8] divided 8 to 10 Gm. into two doses. Phillips[9] divided 90 grains (5.85 Gm.) into three doses. Collins and Root[10] gave 7 Gm. in divided doses and Robinson[11] 4 Gm. in a single dose.

Retention.—Vomiting within from one-half to one hour or a copious watery diarrhea within one or more hours frequently follows the oral administration of soluble iodophthalein. Sometimes both occur. In many of the cases in which one or both of these conditions occur, nevertheless, satisfactory gallbladder shadows are obtained. This might mean that the dose is too large or that absorption takes place very rapidly. Fantus[12] preceded the dye with a hypnotic to prevent emesis and followed with powdered opium to prevent diarrhea. Robinson[11] gave 1 drachm (3.7 cc.) of paregoric one-half hour before the dye to allay the nausea and to retard the passage through the gastrointestinal tract, thereby promoting absorption. This technic is now followed by many roentgenologists.

Reflexes Influencing Liver Excretion.—That the liver, although normal, may fail to excrete the opaque dye has been demonstrated by Goldman and Ivy.[13] In experimental animals they proved that stretching the colon inhibited the flow of bile from the liver. A similar response was obtained after stimulating the central end of the colonic, pelvic, inferior and superior mesenteric nerves, but the inhibition was not present when the hepatic nerves had previously been severed, thereby demonstrating a reflex inhibition of hepatic secretion. Fantus[12] thought absorption took place mainly in the region of the cecum and proximal colon and that stasis in this region prevented absorption. Inability to obtain satisfactory shadows under these conditions may well have been due to reflex inhibition of hepatic function. Lahey and Jordan[14] found that functional disease of the colon interfered with gallbladder filling, but Ferguson and Palmer,[15] Kirklin and Blake[16] and Good and Kirklin[17] concluded that extrabiliary disease did not interfere with normal gallbladder function.

Gallbladder Emptying.—Early in his work, Stewart[2] gave his patients a meal containing large amounts of fat before giving the soluble iodophthalein, believing that this would partially or completely empty the gallbladder and render it "receptive" to the opaque bile. Sosman and his co-workers[4] found that fats would empty the gallbladder in from three to six hours, that lean beesteak had a moderate effect and that carbohydrates and the sight, taste and smell of food had no effect. Boyden,[18] in extensive studies on the response of the human gallbladder to food, found that egg yolk was most effective, causing complete emptying within two and one-half hours. Meat gave the same pattern but was so slow that the organ began to refill before it had been completely emptied. Krause and Whitaker[19] found that fats and fatty acids were by far the most effective and that carbohydrates had no effect at all.

In 1928 Ivy and Oldberg[20] demonstrated that cholecystokinin, a hormone liberated in the upper part of the intestinal tract, was responsible for the contraction and evacuation of the gallbladder. Crandall[21] found little tendency toward spontaneous emptying of the gallbladder in fasting human beings and observed that a patient on a carbohydrate diet showed very slow emptying over a period of twenty-four hours. He concluded that liberation of cholecystokinin by the action of fats or acids was responsible for gallbladder activity. In a later study Ivy[22] demonstrated that cream and egg yolk when introduced directly into the duodenum had no effect on gallbladder contraction but that pancreatic digests of these same substances did cause evacuation. Sussman,[23] in a study of human subjects who were free from any evidence of cholecystic disease, determined that in fasting persons or those on a carbohydrate diet the gallbladder did not empty for at least five days and might remain filled for a much longer time. He attributed the gradual decrease in shadow density to the absorption of the dye by the gallbladder wall. He concluded that gallbladder evacuation depends on cholecystokinin, which in turn depends on the introduction of fats or acids into the duodenum in fairly high concentrations. Three egg yolks emptied the normal gallbladder within thirty minutes. Robinson[11] reported improvement in his cholecystographic studies when the dye was preceded by a meal containing a glass of whole

5. Menees, T. O., and Robinson, H. C.: Oral Administration of Tetrabromophenolphthalein, Am. J. Roentgenol. **13:** 368, 1925.

6. Kirklin, B. R.: Persisting Errors in the Technic of Oral Cholecystography, J. A. M. A. **101:** 2103 (Dec. 30) 1933; Cholecystography, chapter II in Diseases of the Gallbladder and Bile Ducts, by Walters, Waltman,and Snell, Albert M.: Philadelphia, W. B. Saunders Company, 1940.

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9. Phillips, Herman B.: Recent Advances in Diagnosis from and Technic of Cholecystography, Radiology **29:** 602, 1937.

10. Collins, E. N., and Root, J. C.: Cholecystography: Further Observations on the Use of Pitressin and Evaluation of Other Precedures, Radiology **29:** 216, 1937.

11. Robinson, Walter W.: Oral Cholecystography, Radiology **36:** 131, 1941.

12. Fantus, Bernard: Peroral Administration of Colloidal Contrast Media in Cholecystography, J. A. M. A. **89:** 182 (July 16) 1927.

13. Goldman, Leon, and Ivy, A. C.: The Effect of Distention of the Colon and Stimulation of Its Nerve Supply on the Flow of Bile from the Liver, Ann. Surg. **110:** 755, 1939.

14. Lahey, Frank H., and Jordan, Sara M.: Management of Biliary Tract Disease, Am. J. Surg. **11:** 1, 1931.

15. Ferguson, A. N., and Palmer, W. L.: Cholecystography: Its Clinical Evaluation, J. A. M. A. **100:** 809 (March 18) 1933.

16. Kirklin, B. R., and Blake, T. W.: Cholecystic Disease: A Comparison of the Clinical with the Cholecystographic Data, J. A. M. A. **105:** 1416 (Nov. 2) 1935.

17. Good, C. A., and Kirklin, B. R.: The Influence of Extrabiliary Disease on the Function of the Gallbladder, Am. J. Roentgenol. **37:** 346, 1937.

18. Boyden, Edward A.: A Study of the Behavior of the Human Gallbladder in Response to the Ingestion of Food, Anat. Rec. **33:** 201, 1926; An Analysis of the Reaction of the Human Gallbladder to Food, ibid. **40:** 147, 1928.

19. Krause, W. F., and Whitaker, L. R.: Effect of Different Food Substances on Emptying of the Gallbladder, Am. J. Physiol. **87:** 172, 1928.

20. Ivy, A. C., and Oldberg, Eric: A Hormone Mechanism for Gallbladder Contraction and Evacuation, Am. J. Physiol. **86:** 599, 1928.

21. Crandall, L. A.: Mechanism of the Contraction and Evacuation of the Gallbladder, Arch. Int. Med. **48:** 1217 (Dec.) 1931.

22. Ivy, A. C.: The Physiology of the Gallbladder, Physiol. Rev. **14:** 1, 1934.

23. Sussman, M. L.: Emptying of the Normal Gallbladder, Am. J. Roentgenol. **38:** 867, 1937.

milk or a cup of cocoa, well buttered toast and two soft boiled eggs. Kirklin,[24] however, after extensive experience, was firm in the belief that eggs, cream or other fats given before the ingestion of the dye interfere with the examination. He has repeatedly insisted that, if the technic is proper, every gallbladder which does not fill can be said with assurance to indicate pathologic changes in the biliary tract.

Nonvisualization.—Most of the reports that have appeared in the literature have indicated that 8 per cent or more of the nonvisualized gallbladders have later proved to be free from pathologic changes. Ferguson and Palmer [15] concluded, after a large series of routine examinations, that the diagnosis of cholecystic disease on the basis of a normal cholecystogram alone was entirely unwarranted. In a case of nonvisualization after intravenous administration of the dye, Whitaker [8] found, after cholecystectomy, the gallbladder filled with a thick concentrated bile. Microscopic examination showed no pathologic changes in the gallbladder wall. Stewart and Illick [25] thought that some of the failures to fill might be due to a temporary edema of the cystic duct. Jenkinson [26] recommended that all patients with nonvisualization be reexamined after a month, during which time a diet rich in fats should be given.

PRESENT STUDY

No one has yet made a correlation of the reported observations with the roentgen examination of a large number of patients, which I now propose to do.

These studies were undertaken under conditions found in many x-ray laboratories and following accepted roentgenographic procedures.

Object.—The object of this study is as follows:

1. To determine the percentage of presumably normal gallbladders that do not fill on first examination.
2. To repeat some of the studies previously made on the effect of food on the already filled gallbladder.
3. By attention to the preexamination diet, to determine the effect of a high fat diet on filling the presumably normal gallbladder.
4. If it is possible, to suggest a routine that will offer better results in the examination of the gallbladder that is normal.

Procedure.—That the results might be comparable with those of other workers, the general laboratory routine was followed that obtains in many x-ray laboratories. Three preparations of soluble iodophthalein, purchased on the open market, were used. Doses of the three products were 3.5 Gm., 3.6 Gm. and 4 Gm. respectively.

The following written instructions were given each student, who was urged to follow these to the minutest detail or forego the examination entirely:

1. At 6 p. m. eat supper (specific instructions for supper were given to each group, as will be noted).
2. Immediately after supper empty entire contents of bottle in a glass and add water (about 1 ounce [30 cc.]) slowly, stirring until a thick smooth paste is formed. Then add 4 ounces of water (120 cc.), stir well and drink the entire amount.
3. Lie down and keep quiet for at least one hour after taking the dye.
4. Eat nothing after taking the dye; eat no breakfast, although water, black coffee or clear tea may be drunk.
5. Report at the laboratory fourteen hours after taking the dye.

Cathartics are not usually given, but many roentgenologists direct that an enema be taken on the morning that the roentgen examination is to be made. I gave neither cathartics nor enemas. While the technical results of the roentgenograms would undoubtedly have been better had the colon been flushed out, it was deemed best to do nothing that might interfere with the gallbladder being full at the time of examination.

Observations.—The following 512 observations were made on 182 medical students. The ages ranged from 18 to 30 years and the weight from 90 to 190 pounds (41 to 86 Kg.). Every student, as far as it was possible to determine, was free from any illness and especially from any sign or symptom of gastrointestinal, hepatic or biliary tract disease. The results are shown in the accompanying table.

Group 1. One hundred and three students who had not been previously examined were given the preexamination diet with no alteration except for the evening meal preceding the ingestion of the dye. For this they were instructed to eat the usual amount of supper but no eggs, cream, butter or other fats.

Tabulation of Results of Study of Gallbladders

Group	Diet	Number Examined	Number Filled	Number Not Filled	Percentage Not Filled
1	Regular	103	74	29	28
2	Regular *	52	52	Motor meal	100
3	High fat	50	43	7	14
4	Low fat	50	28	22	44
5	Fruit †	25	14	11	44
6	Fruit ‡	25	12	13	52
7	Low fat breakfast	50	37	13	26
8	High fat breakfast	50	41	9	18
9	Breakfast and lunch	37	37	10	27.7
10	Grape juice and paregoric	70	58	12	17.14

* Effect of motor meal on filled gallbladders from group 1.
† For three days before examination.
‡ For three days after gallbladder already filled.

Group 2. Fifty-two students from group 1 who had a positive gallbladder shadow were given a fat meal of cream and eggs and reexamined for effect on evacuation.

Group 3. Fifty students were instructed to eat for a period of three days preceding the examination a large amount of fats, fat meats, cheese, cream, butter and eggs. A similar supper was to be eaten before the ingestion of the dye.

Group 4. Fifty students were given the following instruction: For three days and for the evening meal before taking the dye exclude from the diet all fats already listed and all fried foods.

Group 5. Twenty-five students were given an exclusive fruit diet for three days, including the evening meal before taking the dye.

Group 6. Twenty-five students from groups 3 and 4, who had normal cholecystographic shadows, were given an exclusive fruit diet for three days and then, without receiving additional dye, were reexamined.

Group 7. Fifty students, most of whom had been previously examined but who had been on their regular diet for at least one month, were directed to take a fat free evening meal, as in group 1. The following

24. Kirklin, B. R.: Necessity for Accurate Technic in Oral Cholecystography, Am. J. Roentgenol. **25**: 595, 1931; Cholecystography.[6]
25. Stewart, W. H., and Illick, H. Earl: Five Years' Experience with Cholecystography, Am. J. Roentgenol. **25**: 602, 1931.
26. Jenkinson, E. L.: Cholecystography, J. A. M. A. **107**: 755 (Sept. 5) 1936.

morning they were allowed a breakfast which consisted of toast or sweet rolls without butter but with jam or jelly, cereal with skimmed milk and sugar but without butter or cream and tea or coffee with sugar but with no cream. They then reported for roentgen examination.

Group 8. Fifty students under the same conditions as those in the preceding group were instructed to eat a meal rich in fats, as in group 3, and on the following morning a breakfast as in group 7, before reporting for examination.

Group 9. Thirty-seven students from groups 7 and 8, who showed a normal gallbladder filling after the breakfast given were allowed to eat a lunch of their own choosing. They were then reexamined five hours after lunch or shortly before the next evening meal.

Group 10. Seventy students, of whom 20 were on a minimal fat and 50 were on a high fat diet, were given the dye paste, to which was added 4 ounces of grape juice instead of water. The ingestion of this mixture was preceded by the administration of 1 drachm of paregoric.

COMMENT

When Graham and Cole first announced the use of a dye that would, when injected into the blood stream, be eliminated into the biliary passages and would render the bile in the gallbladder opaque to roentgen rays, virtually nothing, based on present day knowledge, was known about the gallbladder. That the gallbladder was a reservoir for bile was believed, and the importance of bile in fat digestion was generally accepted. By what mechanism the gallbladder was emptied was not known. Roentgenologists were debating the probable influence of a filled stomach, pressure of the duodenal cap, contraction of abdominal musculature or the general increase in interabdominal pressure as the factors which brought this about. Some leading physiologists [27] doubted that the gallbladder could, by contraction of its musculature, evacuate itself. It remained for Ivy to demonstrate the exact mechanism of gallbladder emptying and for Boyden and others to point out the influence of foods other than fats on the activity of this organ.

Knowledge of the physiologic nature of the gallbladder has changed greatly since that early work, but the technic first used in cholecystography is still followed by many roentgenologists. The role played by fat has been accepted, but that a definite relationship may exist between the preexamination dietary habits of the patient and a normal cholecystogram seems to have not occurred to many. That the gallbladder filled with concentrated not easily evacuated bile because of prolonged carbohydrate or low fat diet rather than actual pathologic changes could be responsible for the nonvisualization seems to have not been considered a possibility. That there is a very definite relationship between the preexamination dietary habits of the patient and the results of the cholecystographic study has been demonstrated, I believe, by the present study.

The observations in group 2 reconfirm the role played by fats in producing evacuation of the already filled gallbladder. Groups 6, 7, 8 and 9 demonstrate that a carbohydrate or low fat diet, under the same conditions met with in a medical practice, will not empty the already filled gallbladder.

Groups 4 and 5 demonstrate the fact that in many patients on a low fat or carbohydrate diet the gallbladder will not admit opaque bile in quantities sufficient to cast a shadow. While occasionally calculi are demonstrated in patients free from any evidence of cholecystic disease, it is not common in this age group. It is fair to assume, therefore, that the nonvisualization in these cases was due not to pathologic changes in the gallbladder but to the fact that the gallbladder was already filled with bile.

By the same reasoning it may be assumed that this factor was responsible for nonvisualization in 28 per cent of the cases in group 1. From this group one may also conclude that many patients in the economic class from which medical students are drawn get an inadequate amount of fat in their regular diet.

An analysis of the studies of group 3 clearly indicates that fat feeding before the introduction of the dye not only does not interfere with but actually aids filling of the gallbladder. That 100 per cent filling after the fat feeding was not obtained is not an indictment of the procedure. It rather indicates that the amount of fat was inadequate or that the feeding was not carried out over a sufficient length of time. It may also indicate that factors other than diet also interfere with the filling of the normal gallbladder. This has been suggested by other workers. It is a point which needs further study.

I feel, however, that sufficient evidence has accumulated to warrant the suggestion that a high fat diet is indicated for a period of several days before cholecystic examination. It is obvious that this dietary regimen should be under the control of the referring or family physician. It has been suggested that when calculi are present such a procedure might precipitate a "gallbladder colic." I have been able to find no proof of this assertion. Fat feeding, however, might be withheld in those cases in which calculi are known to be present or in which the history, clinical and laboratory findings definitely point to cholecystic disease and roentgenograms are desired only for confirmation.

That nausea, emesis and diarrhea do not interfere with gallbladder filling is indicated by the findings in group 10. The percentage of filling in this group was not appreciably different than that in the other groups which were on the same diet. This would indicate that the amount of dye was sufficient and the retention long enough to permit adequate absorption. The addition of grape juice and the use of paregoric, however, rendered the entire procedure very much less disagreeable for the patient.

CONCLUSIONS

From the work of others here reported and from the observations made in the present study I feel justified in making the following conclusions:

1. Fat is an essential factor in the gallbladder emptying mechanism.

2. Patients on a fat free or low fat diet may have a gallbladder which, not emptied for days, may be distended with thick concentrated bile, and such a gallbladder, unable to admit more bile, will not be visualized on roentgen examination.

3. All patients whose gallbladder is examined routinely or who have a questionable or doubtful cholecystic history should be put on a high fat diet for several days or even weeks before the roentgen examination.

875 Monroe Avenue.

27. Carlson, A. J.: Physiology of the Liver, J. A. M. A. **85**: 1468 (Nov. 7) 1925.

PNEUMONOCONIOSIS ENCOUNTERED IN BITUMINOUS COAL MINERS

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For many years silicosis has been accepted as a definite clinical entity occurring in workers exposed to siliceous dust in various mining occupations. Anthracosilicosis in employees of anthracite mines has long been recognized, but one is surprised at the paucity of mention in medical literature of nodular or fibrotic pulmonary changes in bituminous coal miners.

It is a well known fact that dusts, both organic and inorganic, are present in variable concentrations in the mining and preparation of bituminous coal. Gardner [1] in 1938, in the evaluation of irritating effects of various minerals on the tissue of experimental animals, demonstrated that bituminous coal dust was irritating as well as anthracite dust. Cummins and Sladden [2] in 1930 concluded that anthracosis was not a simple condition, as thought by many, but was a form of pulmonary fibrosis, usually due to an associated silicosis. Clark and Moffett,[3] in a recent study of 774 miners employed by a bituminous coal company in the southern Appalachian region, found that 2 per cent of the workers had presilicotic changes and 1 per cent showed silicotic nodulation. The Division of Industrial Hygiene of the United States Public Health Service, collaborating with the Utah State Board of Health,[4] published in 1940 a report based on the study of three bituminous coal mines in Utah. In this study there were adequate engineering as well as medical criteria. The authors pointed out that practically all of the suspended dust particles in the atmosphere of these mines were capable of entry into the lungs and that the dust concentrations in most of the underground occupations were great enough to constitute a dust hazard. In this series 507 workers were examined, and 3.2 per cent were found to have anthracosilicosis after all persons having had other exposure were excluded.

Several years ago my colleagues and I became impressed with the number of soft coal miners presenting themselves at our institution, located in the bituminous coal field of southern West Virginia, with either a major or a minor symptom of chronic cough or dyspnea, usually referred to by the patient as "miners' asthma." This stimulated our interest and led to our obtaining a more careful history, especially with regard to the industrial aspect. A careful fluoroscopic and roentgenographic study of the chest and routine sputum and blood analyses were made on the patients with the aforementioned symptoms and those having long employment in the bituminous coal mines. During the four year period 86 cases of silicosis were discovered in which silicotic changes were present in varying degrees. In this series were included only those cases in which exposure to dust had been in bituminous coal mines alone. Several cases showing silicotic changes were excluded since the men had previously worked in dissimilar types of industry having a dust hazard. Other cases in which the condition was predominantly infectious, with only a minimal evidence of silicosis, were not included in this series. In correlating the industrial histories one is impressed by the fact that coal miners have a tendency to migrate from mine to mine. In a period of several years they will have worked for various companies and in several capacities, each job probably having quite a different degree of dust concentration. This variation in employment makes it difficult to classify each miner so as to make an accurate statistical study. For the sake of simplicity, I have made an effort to place each miner in some group, depending on his history with regard to dust exposure, together with the length of employment in each occupation.

Each respective case in this series has been classified under stage 1, 2 or 3 silicosis. Those cases showing only a fine nodular or grainy appearance, diffuse haziness or a ground glass appearance, with no, or only partial, obliteration of the linear markings, were classified under stage 1. The nodules in this group usually measured less than 1 mm. in diameter, and there was a varying degree of hilar proliferation and broadening.

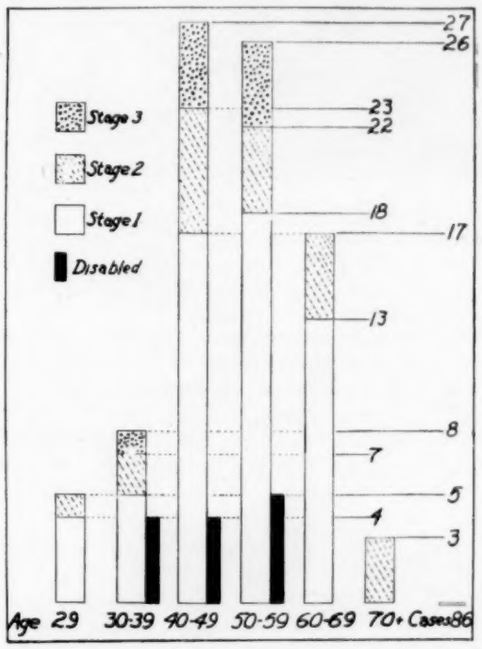

Fig. 1.—Age groups, with number of cases in each group, stage of involvement and disability incidence.

Those cases in which more nodulation was demonstrated, the nodules exceeding 1 mm. in diameter, with associated emphysema (the latter usually being present at the apexes and bases), were placed under stage 2. A large number of the patients in this group presented themselves with varying degrees of pulmonary symptoms.

In stage 3 the symptoms were pronounced. Emphysema was demonstrated at the bases of the lungs, and often in the apexes. These changes were observed on physical examination as well as on roentgenographic study. A large portion of the nodules had become coalescent, giving a conglomerate appearance, and the hili were indistinct. The persons in this group were disabled for the performance of manual labor. There was associated superimposed infection, in some tuberculous. A few cases showed cavitation, obviously associated with

From the Medical Service, Laird Memorial Hospital.

Dr. Lewis E. Nolan performed the necropsies and studied the histologic sections, and Dr. Ernst Wolff assisted in the preparation of the roentgenograms.

1. Gardner, LeRoy U.: Etiology of Pneumoconiosis, J. A. M. A **111**: 1925-1936 (Nov. 19) 1938.

2. Cummins, S. L., and Sladden, A. F.: Coal Miners' Lungs: An Investigation into the Anthracotic Lungs of Coal Miners in South Wales. J. Path. & Bact. **33**: 1095-1132 (Feb. 14) 1930.

3. Clark, B. G., and Moffett, C. E.: Silicosis in Soft Coal Miners. J. Indust. Hyg. & Toxicol. **23**: 176-186 (May) 1941.

4. The Working Environment and the Health of the Workers in Bituminous Coal Mines in Utah, Bull. U. S. P. H. S. and Utah State Board of Health, November 1940

acid fast organisms and in others probably the result of silicotic necrosis.

In arriving at a conclusion in each individual case other pulmonary lesions were ruled out. The conditions considered in differentiation were miliary, chronic, nodular and fibroid tuberculosis, primary or metastatic carcinoma, sarcoidosis and residual changes as the result of arteriosclerosis. A large number of patients were hospitalized for diagnostic observation.

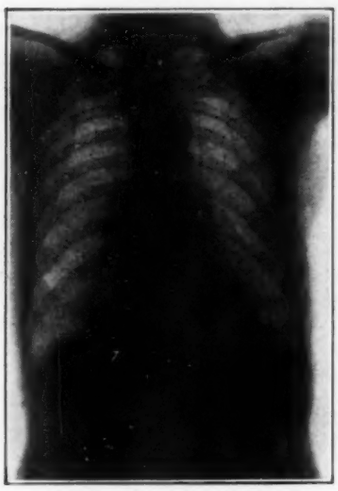

Fig. 2 (case 1).—Anthracosilicosis stage 1. Note uniform haziness with fine filament of fibrosis and small, delicate, generalized nodules.

In the accompanying chart and table some of the important features of this group of cases are analyzed. Figure 1 graphically presents 86 cases of anthracosilicosis divided according to the age decade, with the number of cases of each stage of the lesion in each decade. The total number of persons disabled in each group is included. The first group numbered 5 patients, and the youngest patient was 26 years old. The oldest patient in whom anthracosilicosis was found was 79. The average age of the 86 patients was 50.75 years. It is interesting to note that the extreme age groups (the 5 included in the decade ending at 29 years and the 70+ year group) showed fewer patients than the others and that none of the patients were disabled. There was a larger number in the 60 to 69 year group, which totaled 17 patients. None of these patients were classified under grade 3, although 1 was considered disabled. All the patients with stage 3 involvement, it is shown, were found in the middle aged group (30 to 59 years) and the largest total number was represented here. Thirteen patients, or 15 per cent of the total series of 86, were classified as being disabled. This group represents the more active span of the individual worker's productive life. In this graphic representation no attempt has been made to subject the series of cases to a further statistical analysis, as this is not an industrial group study and any further analysis might lead to erroneous deductions.

Analysis as to Period of Working in Bitumi..ous Coal Mines, Occupation, Stage of Involvement and Disability

Years of Exposure	Machine	Loader	Driller	Shooter	Foreman	Motor	Total No. of Cases	Stage I	Stage II	Stage III	Disabled
5- 9	4	..	3	..	..	..	7	4	1	2*	1
10-14	4	2	2	1	..	2	11	7	2	2	2
15-19	4	2	..	..	..	3	9	7	2	..	..
20-24	3	9	..	2	..	..	14	9	3	2	4
25-29	4	7	..	..	1	2	14	6	5	3	4
30-34	2	9	..	..	..	1	12	9	3	..	2
35-39	1	8	..	1	..	..	10	9	1	..	..
40-49	..	4	..	..	..	..	4	4	..	..	..
50-59	..	3	..	..	..	..	3	2	1	..	..
60	..	2	..	..	..	..	2	..	2	..	..
Total	22	46	5	4	1	8	86	57	20	9	13

* Case 6 was included in this group, the patient having been employed nine years as a driller.

In the table the series is analyzed as to years of exposure, chief mining occupation and stage of involvement. This study demonstrates that in terms of disability the total period of employment in the mining industry is not of paramount significance. All of the stage 3 group is composed of those persons who had less than thirty years' employment. The average period of employment in bituminous coal mining for all patients studied was twenty-eight years.

It is worthy of note that in the group of 7 miners with not more than nine years of exposure 3 were classified as having stage 2 or stage 3 involvement. These 3 men were all employed as machine men, motormen or drillers, which leaves the impression that persons working in these three occupations are subjected to higher dust concentrations than men in other types of employment. The same impression is noted in studying the group who had had ten to fourteen years' exposure. Those patients with longer periods of employment were mainly loaders and, as a group, showed a lesser degree of involvement in spite of many more years of working in bituminous coal mining.

The following cases taken from this series will illustrate the various histories, clinical and laboratory findings, roentgenographic changes and, in some cases, pathologic features. Two cases with autopsy are presented.

REPORT OF CASES

CASE 1.—I. W. P., a white man aged 71, complained of slight chronic cough with exertional dyspnea. The presenting symptoms were not featured. He had been a coal loader in West Virginia coal mines for sixty-one years and showed no unusual chest signs on physical examination. There was mild generalized arteriosclerosis. Studies of the blood gave normal results, including the sedimentation rate. The sputum was negative for acid fast organisms. The lungs showed uniform haziness, with a fine filament of fibrosis, and small, delicate nodules were scattered throughout The apexes appeared clear. The diagnosis was anthracosilicosis stage 1 (fig. 2).

CASE 2.—I. S., a Negro aged 29, complained of moderate dyspnea. He had been a driller in the mines for one year, a motor brakeman for two years and a coal loader for eight years. His serologic reactions were positive; the sputum was negative for acid fast organisms. There was slight increase in the sedimentation rate; otherwise the hematologic survey revealed nothing abnormal. He was afebrile during the several days of observation. A roentgenogram showed small foci of nodular areas of increased density, with hazy margins scattered throughout all lobes. The hili were broadened, and strands of increased density were seen extending into both apexes, more pronounced on the left. The condition in this case was differentiated from miliary tuberculosis by the clinical course. Repeated studies over a period of several months, during which time the patient was under antisyphilitic therapy, showed no changes either on

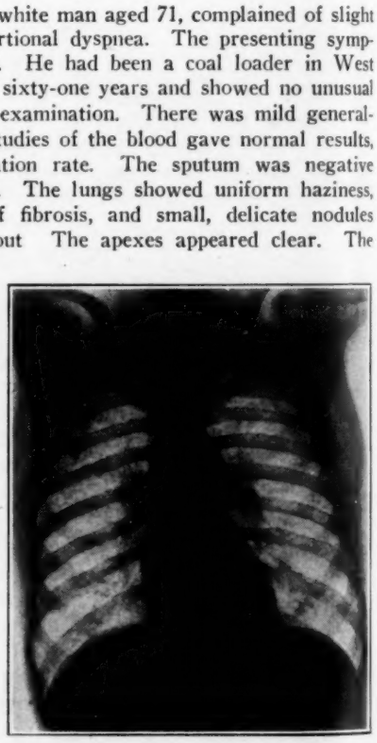

Fig. 3 (case 2).—Anthracosilicosis stage 2, with probable infection. Note small nodular areas of increased density with hazy margins scattered throughout all lobes, with hilar broadening. Serial studies showed no change.

roentgenographic or on clinical study. The diagnosis was anthracosilicosis stage 2, probably with infection (fig. 3).

CASE 3.—J. R., a white man aged 52, complained of bilateral pleuritic pain, the pain being of two days' duration on first examination. He gave a history of moderate dyspnea, with a hacking, nonproductive cough of several years' duration, without hemoptysis or constitutional symptoms. His employment record showed twenty-eight years in soft coal mines as motor brakeman, driller and foreman; for the last eleven years he had been employed as a safety inspector. Throughout the period of hospitalization the temperature was not elevated, although there was a moderate amount of tachycardia on exertion. The chest was poorly developed and of the rachitic type. A pleuritic dry friction rub was heard at the bases of both lungs, with coarse, musical rales throughout, and very distant breath sounds in the midportion of the lung fields; the chest expansion was 2 inches (5 cm.). The hematologic survey revealed nothing abnormal except slight increase in the sedimentation rate; a series of sputum examinations showed no acid fast organisms. A roentgenogram revealed multiple small nodular areas of increased density throughout both lungs, extending into the apexes, with confluent increased density in the right upper lobe and a smaller area at the base of the left upper lobe. Repeated studies over a three year period showed no change in the roentgenographic picture. The diagnosis was anthracosilicosis stage 3 (fig. 4).

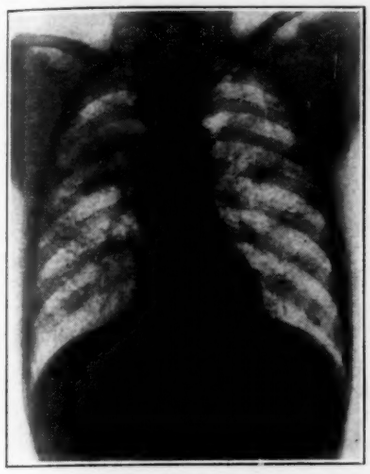

Fig. 4 (case 3).—Anthracosilicosis stage 3. Note multiple small nodular areas of increased density throughout all lobes, with confluent areas in the right upper and the base of the left upper lobe. No change was evident on serial examination.

CASE 4.—L. S. P., a white man aged 53, complained of dyspnea, persistent cough and progressive weakness of five years' duration. The patient had become symptom free when at rest. The cough had been productive for one year, without hemoptysis, and there had been a 40 pound (18 Kg.) loss of weight during the five years. He had been employed in bituminous coal mines for twenty-two years—thirteen as shot boss, the remainder as loader and shooter. The patient was afebrile during hospitalization, although there was slight tachycardia at all times and the respiratory rate was moderately elevated even at rest. Coarse rales were heard in the midportion of the lung fields posteriorly. There was rather decided tachycardia on holding the breath. Moderate increase was shown in the sedimentation rate; otherwise the results of the hematologic survey were not abnormal. Examination of the sputum was negative for acid fast rods; roentgenographic study showed hazy, dense mottling between the first and sixth ribs anteriorly, with diffuse nodulation and conglomeration in this area; hilar shadows were diminished and nodulations hazy; pleurodiaphragmatic adhesions were present; the apexes and bases were relatively clear. The diagnosis was anthracosilicosis stage 3 (fig. 5).

In the following 2 cases pulmonary changes were demonstrated post mortem in persons from two separate occupational groups. The first was a coal loader over a period of fifty years; the second, a driller for nine years:

CASE 5.—The body was that of a 66 year old white man who had been employed in bituminous coal mines for fifty years as a coal loader. The cause of death was acute peritonitis, secondary to acute suppurative gangrenous appendicitis with perforation. When the thorax was opened the hilar lymph nodes were seen to be slightly enlarged and were black on sectioning. The pleural cavities were free of fluid and adhesions. The left lung weighed 665 Gm.; the right, 680 Gm. Externally and internally the pulmonary surfaces were coal black. All the lobes contained small, firm, nodular areas, 4 to 8 cm. in diameter, extending from the hilus to the periphery. There were an increase of fibrous connective tissue and emphysematous bullae along the lateral margins of the lower lobes and in the apical areas of the upper lobes. The pericardium and the heart were grossly normal. Microscopic study (with hematoxylin and eosin and Masson's technic) demonstrated numerous fibrous nodular areas about the blood vessels and lymphatics, made up of fibrous connective tissue and collagen, with an extensive deposit of blackish pigment in the areas. The capillaries were compressed at the margin of the nodules. Infiltration of occasional polymorphonuclear and mononuclear cells was observed. Large numbers of emphysematous alveolar spaces were present. Some of the alveoli contained macrophages, and the walls of the bronchi were thickened, with increase of fibrous connective tissue. The lumen contained polymorphonuclear and red blood cells. Chemical analysis revealed a total silicon dioxide content of 0.36 per cent of dried lung.

CASE 6.—O. T., a 48 year old white man, had been a farmer until nine years before his death. During the last nine years he had been employed in bituminous coal mines as a driller.

When the thorax was opened it was observed that the lungs were rigid and filled the chest cavity. The walls of the bronchi were thickened, and the hilar lymph nodes were enlarged, measuring from 2 to 3 cm. in length, and were firm and gray. The left lung weighed 1,440 Gm. and the right 1,480 Gm. Crepitation was noticeably diminished in both lungs. They contained firm, nodular areas and were fairly rigid. The left upper lobe was bound to the chest wall by dense, fibrinous adhesions. The lungs cut with greatly increased resistance, disclosing numerous whitish gray and a few yellow gray, rounded nodular areas of fibrosis, 3 mm. to 2.4 cm. in diameter. The larger nodules were situated in the peripheral portion of the lobes. There were macroscopic areas of emphysema between nodular areas of fibrosis throughout all lobes. Many of the fibrous areas were confluent. The pericardium was normal. The heart weighed 430 Gm. and was grossly normal.

Fig. 5 (case 4).—Anthracosilicosis stage 3. Note hazy, dense mottling between the first and sixth ribs, with diffuse nodulation and conglomeration in this area. Hilar shadows were diminished and nodules hazy. Diaphragmatic adhesions were present.

Microscopic examination of the numerous sections from various representative areas of lung tissue disclosed massive rounded areas of dense fibrous connective tissue and collagen, which had extensively destroyed the lungs. The nodules were made up of irregular whorls of dense fibrous connective tissue interspersed with collagen, and many of them had hyaline areas. Some nodules were small, measuring approximately 500 microns in diameter, while others were coalescent and made up of masses of fibrous tissue, measuring from 1 to 2.5 cm. in diameter. The pulmonary alveoli at the margins of the fibrous nodules presented large saccular spaces. The emphysematous areas formed an extensive part of the histologic picture between nodular areas of fibrosis. The nodules were

relatively acellular, and in many the nuclei had entirely disappeared. There were scattered lymphocytes and polymorphonuclear neutrophilic leukocytes at the margin of the nodules. In the dense fibrous areas the capillaries were compressed and for the most part obliterated. In the emphysematous areas the capillaries were dilated and filled with erythrocytes. Some of the alveoli were filled with small polyblasts, plasma cells, lymphocytes and polymorphonuclear neutrophilic leukocytes. The interalveolar septums contained lymphocytes, polymorphonuclear neutrophilic leukocytes and a few macrophages. In some alveolar areas were seen large mononuclear cells with brownish coarse pigment in the cytoplasm. In the emphysematous areas many of the small blood vessels were surrounded by circular areas of fibrosis. These areas contained many fibroblasts, a few lymphocytes and polymorphonuclear neutrophilic leukocytes, large mononuclear neutrophilic leukocytes, a small amount of serum and desquamated epithelial cells. In the fibrotic areas occasional small irregular particles of blackish pigment were observed. In some of the lymph nodes were irregular areas of fibrosis with extensive hyaline formation. Other nodes contained caseous tubercles, made up largely of epithelial cells with marginal lymphocytes. The mesenteric lymph nodes embodied extensive areas of caseation surrounded by fibrous capsules infiltrated with lymphocytes. In the spleen were numerous miliary tubercules made up largely of epithelial cells. The liver contained numerous miliary tubercles made up of epitheloid cells, Langhans giant cells and peripheral lymphocytes. There was beginning necrosis at the center of many of the tubercles. Study of the adrenal glands revealed numerous small tubercles with central necrotic areas surrounded by epitheloid cells, giant cells with peripheral nuclei and a marginal zone of lymphocytes.

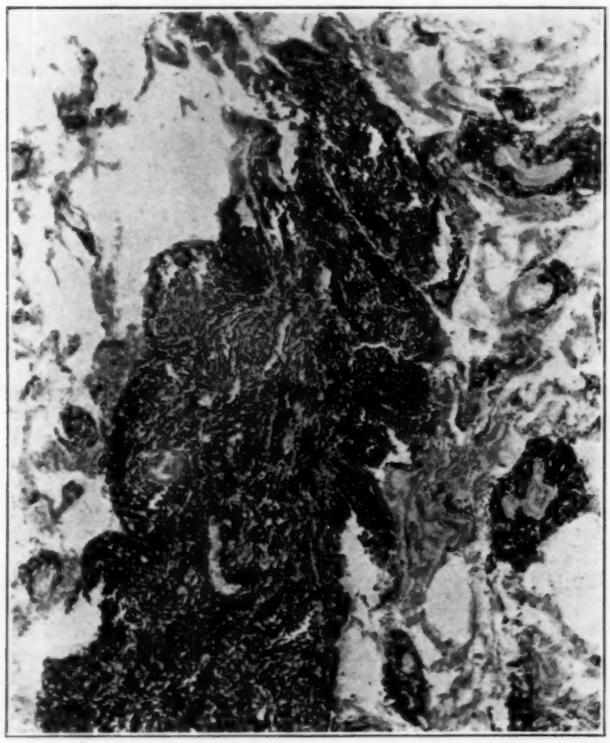

Fig. 6 (case 5).—Anthracosilicosis. Note fibrous nodular areas about the blood vessels and lymphatics, containing collagen and an extensive deposit of blackish pigment. There are areas of emphysema adjacent to the nodules. Reduced from a photomicrograph with a magnification of 100 diameters.

The cause of death was pulmonary silicosis; the associated cause, chronic pulmonary tuberculosis, with miliary dissemination. Chemical analysis disclosed a silicon dioxide content of 3.05 per cent of dried lung.

COMMENT

I do not feel that an accurate statistical study of this group of cases can be made, as many were referred for compensation or medicolegal opinion. In this study of 86 cases I have attempted to show that silicosis in soft coal miners is not a rare disease and that "miners' asthma" and anthracosilicosis are one and the same. The entity can be detected by means of a searching clinical study of persons employed as underground workers in the mining and preparation of bituminous coal. It has been demonstrated that the greater number of cases occur in the decades from 40 to 60 years of age and that the majority of the persons disabled by anthracosilicosis are in this span. However, 4 men in the next younger decade (30 to 39 years) were disabled. All of those in the disabled group had spent a large part of their mining life as drillers, motor runners, coal shooters or machine men. These occupations appear to be the most hazardous in the way of exposure to siliceous dust, to the extent of causing disability.

One concludes that disability is not necessarily in proportion to the total number of years employed in the mining industry but depends more on the occupation. However, a lesser but definite degree of anthracosilicosis does occur, although not to a disabling extent, in loaders and other underground workers after long years of employment.

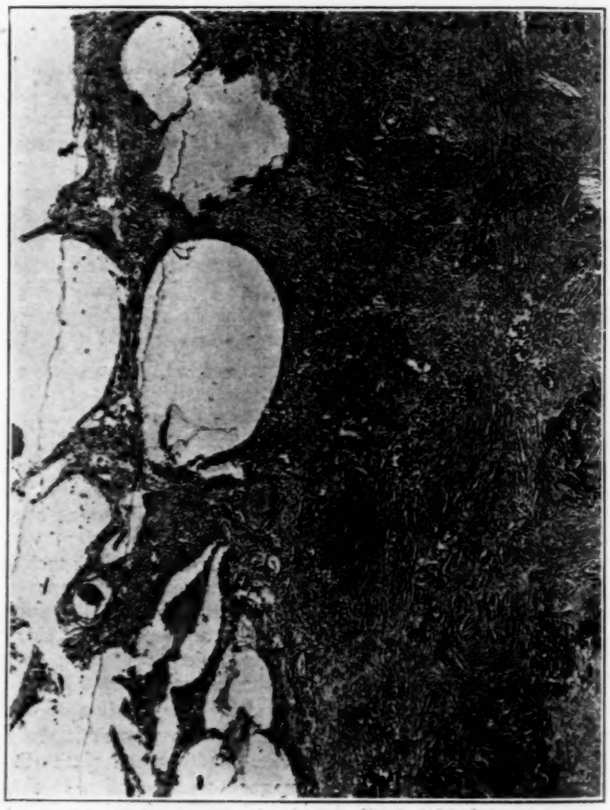

Fig. 7 (case 6).—Extensive severe pulmonary silicosis. Observe massive rounded area of dense fibrous connective tissue and collagen arranged in irregular whorls interspersed with collagen. There are emphysematous saccular alveolar spaces at the margin. Some of these contain serum and neutrophils. Note dilated capillaries filled with erythrocytes at the margin and compressed capillaries with the fibrous nodule. Reduced from a photomicrograph with a magnification of 100 diameters.

Postmortem studies show that pneumonoconiosis in soft coal miners may be of two types: 1. The well known deeply pigmented lung may show rather definite changes of associated silicosis as the result of long years

of exposure to bituminous coal dust containing silica. 2. There may be advanced conglomerate pulmonary silicosis with a minimum of anthracotic pigment.

Unfortunately, little work has been done on group surveys of underground workers in the bituminous coal industry. Before a definite impression can be had as to the real incidence of silicosis and anthracosilicosis in these workers, systematic studies of large groups in the soft coal fields will have to be carried out. At the same time, information regarding dust hazards as determined by thorough engineering surveys is almost completely lacking. Before worth while statistics become available showing the actual incidence and degree of silicosis and the hazards due to bituminous coal dust containing silica in the bituminous coal industry, thorough industrial engineering and medical surveys in the various fields must be made and the results of the two correlated.

CONCLUSIONS

Anthracosilicosis should be suspected in all soft coal miners with cough and dyspnea, usually referred to as "miners' asthma."

The cases in the series have been classified as those of stage 1, 2 or 3 involvement; in 13 cases the men were disabled.

Disability is not necessarily in proportion to the number of years of employment in the mines but depends more on the occupation.

Further group medical studies and engineering surveys should be made in the bituminous coal industry, with correlation of the findings.

THE TREATMENT OF TYPHOID AND DYSENTERY CARRIERS WITH SUCCINYLSULFATHIAZOLE

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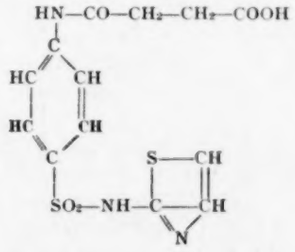
AND
LOWELL A. RANTZ, M.D.
SAN FRANCISCO

The discovery that certain derivatives of sulfanilamide are relatively poorly absorbed from the gastrointestinal tract marked the beginning of a new era in intestinal antisepsis. One of these compounds, sulfaguanidine, has been given extensive clinical trial and has been found to be of value in the treatment of patients with acute bacillary dysentery [1] and of dysentery carriers.[2] In cases of typhoid,[3] the typhoid carrier state [4] and ulcerative colitis,[5] the results have been discouraging. Patients undergoing extensive operations on the bowel were also given this drug with the hope that reduction of the number of gram-negative bacilli in the intestinal contents might cause a decrease in the incidence of infections of the peritoneal cavity due to fecal contamination. It was not entirely satisfactory for this purpose, partly because it was absorbed into the blood stream to such an extent that it gave rise to frequent and occasionally severe reactions and partly because it was ineffectual in the presence of ulcerating lesions of the bowel.[5]

In an attempt to overcome these objections, Poth and his associates [6] investigated a number of sulfonamide compounds and found some that were poorly absorbed from the gastrointestinal tract and that possessed bacteriostatic activity even when the primary amino group on the benzene ring of sulfanilamide or one of its derivatives had been conjugated with dibasic organic acids to form substituted acid amides. The most promising of these substances was succinylsulfathiazole, the formula for which is



Since the bacteriostatic action of the sulfonamides is known to be dependent on the presence of the free amino group on the benzene ring, the mode of action of this compound needs to be explained. It has practically no in vitro activity. Although it was postulated that the presence of the free carboxyl group might somehow "give a high local concentration of a reactive, excited form of nascent sulfathiazole in intimate contact with the organism," Poth showed that the drug is hydrolyzed in the intestinal tract, giving a concentration of free sulfathiazole of from 50 to 200 mg. per hundred cubic centimeters. Such concentrations are known to have strong bacteriostatic and bactericidal activity,[7] and until concrete evidence of the production of "nascent sulfathiazole" is forthcoming it can be concluded that the action of succinylsulfathiazole is entirely dependent on the liberation of free sulfathiazole and that the addition of the succinyl radical to the sulfathiazole molecule merely inhibits absorption from the gastrointestinal tract.

When administered to patients, the drug produced "a profound change in the physical characteristics and the bacterial flora of the feces." [8] The stools became small in bulk, semifluid and relatively odorless, and the number of coliform bacilli was drastically reduced. Absorption from the gastrointestinal tract was slight, with only 5 per cent being excreted by the kidneys. Severe toxic reactions were not noted, and there was a general impression that administration of the drug to surgical patients was associated with a "smooth, uncomplicated postoperative convalescence."

Reports of treatment of nonsurgical conditions with succinylsulfathiazole have not yet appeared. Our purpose in this communication is to present the results of administration of this drug to normal persons and to typhoid and dysentery carriers and to compare these results with those following administration of sulfaguanidine, which were previously reported from this clinic.[9]

From the Department of Medicine, Stanford University School of Medicine.

1. Lyon, G. M.: Chemotherapy in Acute Bacillary Dysentery; Clinical Use of Sulfanilylguanidine, West Virginia M. J. **37**: 54 (Feb.) 1941. Marshall, Bratton, Edwards and Walker.[3]

2. Rantz, L. A., and Kirby, W. M. M.: The Use of Sulfaguanidine in the Treatment of Dysentery Carriers, J. A. M. A. **118**: 1268 (April 11) 1942.

3. Marshall, E. K., Jr.; Bratton, A. C.; Edwards, Lydia B., and Walker, Ethel: Sulfanilylguanidine in Treatment of Acute Bacillary Dysentery in Children, Bull. Johns Hopkins Hosp. **68**: 94 (Jan.) 1941.

4. Cutting, W. C., and Robson, G. B.: The Alleged Efficiency of Medicinal Treatment of Typhoid Carriers, J. A. M. A. **118**: 1447 (April 25) 1942.

5. Firor, W. M., and Poth, E. J.: Intestinal Antisepsis, with Special Reference to Sulfanilylguanidine, Ann. Surg. **114**: 663 (Oct.) 1941.

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7. Strauss, Elias, and Finland, Maxwell: Bacteriostatic and Bactericidal Action of Sulfadiazine in Vitro on Gram-Negative Bacteria, Proc. Soc. Exper. Biol. & Med. **47**: 432 (June) 1941.

8. Poth, E. J., and Knotts, F. L.: Clinical Use of Succinylsulfathiazole, Arch. Surg. **44**: 208 (Feb.) 1942.

9. Rantz and Kirby.[2] Cutting and Robson.[4]

METHOD

Succinylsulfathiazole,[10] 0.25 Gm. per kilogram, was administered to 11 persons, 3 without evidence of disease, 3 typhoid carriers and 5 dysentery carriers, all of whom remained ambulatory throughout the course of treatment. The daily dose was divided into four portions, which were taken at 8 a. m. and 1, 6 and 11 p. m., and the duration of administration of the drug varied from five to fourteen days.

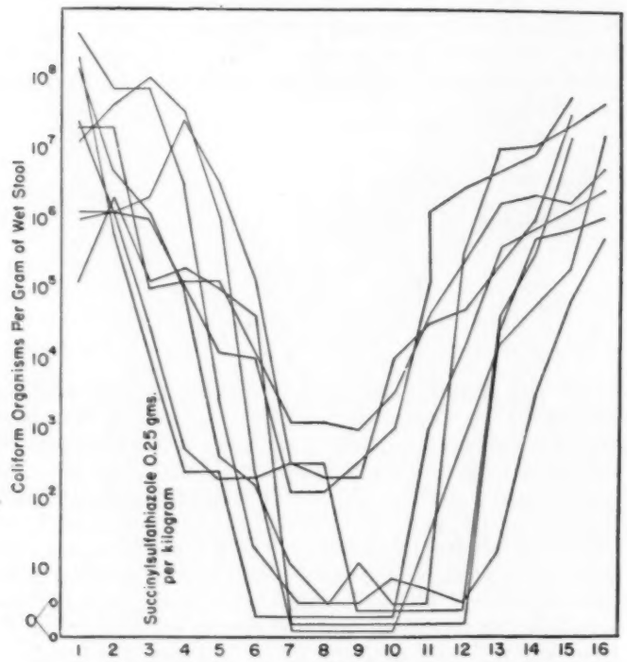

Chart 1.—The effect of succinylsulfathiazole on the colon bacilli in the stools of 9 persons. There was a sharp reduction in all instances, and in 6 the coliform organisms disappeared altogether. When the drug was discontinued the number of colonies of Escherichia coli returned to normal in from three to five days.

The alteration of the bacterial flora of the intestinal contents was studied by daily quantitative counts of the number of colon bacilli in freshly voided stools. All counts were made on pour plates with MacConkey's medium to which 5 mg. per hundred cubic centimeters of para-aminobenzoic acid had been added to inhibit the action of the sulfonamide drug. A small quantity of feces was suspended in a few cubic centimeters of isotonic solution of sodium chloride, centrifuged at 1,700 revolutions per minute for fifteen minutes, and dilutions were made on the basis of the quantity of sediment, 0.1 cc. of sediment being considered equivalent to 0.1 Gm. of wet feces. Counts were made for at least two days before the drug was administered, and in 9 of the 11 cases were continued until the number of coliform organisms had returned to normal. Quantitative counts were also made of the typhoid and dysentery colonies, which could be easily distinguished from the coliform colonies on the MacConkey pour plates.

The odor and character of the feces were noted, and to establish the time of appearance and disappearance of the drug in the stools qualitative tests were made daily for the presence of the sulfonamide drug. The amount of free sulfathiazole in the blood was determined on the third or fourth day, and in 5 cases the twenty-four hour urinary output of total sulfathiazole was determined on one or more occasions. All sulfonamide determinations were made according to the method of Bratton and Marshall.[11]

10. Sharp & Dohme, Inc., supplied the succinylsulfathiazole used in this study.

RESULTS

Effect on Stools.—The effect of the drug on the stools varied considerably in different persons. In 6 instances they became slightly loose, lighter in color and smaller in bulk and had practically no odor. In the others the changes were much less noticeable, in 1 or 2 remaining entirely normal and in the others showing slight to moderate alterations of the same character as those just described.

The effect on the colon bacilli also showed individual variations. The results in the 9 cases in which daily quantitative counts were made are shown graphically in chart 1. In 6 the coliform organisms disappeared from the stools completely, and while they were definitely reduced in the other 3 considerable numbers were still present. In every case the number of colon bacilli returned to normal within three to five days after administration of the drug had been discontinued.

Although the gram-negative organisms were absent in some instances, the stools were not sterile. Gram-positive organisms, especially enterococci, were present in large numbers, as demonstrated by cultures on blood agar plates.

Absorption and Excretion.—The blood levels for free sulfathiazole were consistently low, varying from 0.6 to 1 mg. per hundred cubic centimeters, indicating that the drug is only slightly absorbed from the gastrointestinal tract. Total sulfathiazole levels for twenty-four hour urine specimens varied from 20 to 62 mg. per hundred

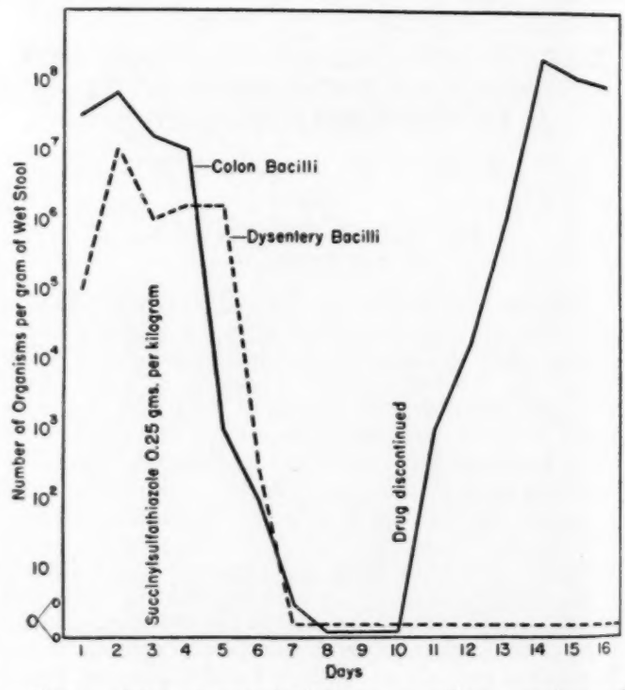

Chart 2.—Effect of succinylsulfathiazole on coliform organisms and dysentery bacilli in the stools of a dysentery carrier. The number of colonies of Escherichia coli returned to normal four days after the drug had been discontinued, while dysentery bacilli have remained absent during a follow-up period of sixty days. Similar results were obtained in 4 other dysentery carriers.

11. Bratton, A. C., and Marshall, E. K., Jr.: A New Coupling Component for Sulfanilamide Determination, J. Biol. Chem. **128:** 537 (May) 1939.

cubic centimeters, which was from 2.2 to 4.1 per cent of the total drug (as succinylsulfathiazole) ingested in twenty-four hours.

The time of appearance of the drug in the stools, as measured by the qualitative presence of free sulfathiazole, varied from one to three days, and three to five days was required for all traces to disappear after treatment was discontinued.

Dysentery Carriers.—Dysentery bacilli disappeared from the stools of all 5 patients within one week after treatment was begun and have remained absent during the follow-up period of thirty to sixty days (chart 2). In 3 of these the colon bacilli also disappeared completely, so that for three or four days there was no growth on the plates at all. The possibility that insufficient para-aminobenzoic acid was present in the medium to inhibit the action of the drug was excluded by streaking the plates with a suspension of normal stool, and good growth invariably occurred. In the other 2 patients the number of colon bacilli was sharply reduced but they did not disappear altogether.

Typhoid Carriers.—The 3 typhoid carriers, all middle aged women who refused to have their gallbladders removed, had been previously treated unsuccessfully with sulfaguanidine.[4] With succinylsulfathiazole the results were equally unsatisfactory. Although somewhat decreased, large numbers of typhoid bacilli were constantly present in the stools throughout the two weeks of drug administration.

Toxic Reactions.—Almost all the patients reported that the drug acted as a mild laxative. Their stools were loose, and they had three or four movements a day, but none had actual diarrhea. Four complained of mild perianal irritation that lasted three or four days and then disappeared in most instances before they stopped taking the drug. Otherwise toxic reactions were not noted. There was no nausea, vomiting, dizziness, headache, fever, cutaneous rashes, hematuria or anemia. The patients remained ambulatory, and all were able to continue their daily routine. Two of the typhoid carriers who suffered from severe nausea, vomiting and headache while taking sulfaguanidine did not experience any discomfort whatever during succinylsulfathiazole administration.

COMMENT

The original observations of Poth and his associates concerning the effects of succinylsulfathiazole administration on the intestinal contents have been confirmed in the present study. The stools become lighter in color and are relatively small in bulk, the odor is diminished and the number of colon bacilli is sharply reduced. The drug is only slightly absorbed from the gastrointestinal tract, producing blood levels of free sulfathiazole of less than 1 mg. per hundred cubic centimeters, and less than 5 per cent is excreted in the urine.

Since the succinyl radical is attached to the amino group on the benzene ring, the drug has no in vitro activity, and its effectiveness in vivo is presumably due entirely to hydrolysis in the gastrointestinal tract with the liberation of free sulfathiazole. Poth has shown that concentrations of free sulfathiazole ranging from 50 to 200 mg. per hundred cubic centimeters are found in freshly voided stools, indicating that variability exists. The extent to which hydrolysis occurs in different persons probably accounts for the fact that there is more noticeable alteration in the physical characteristics and bacterial flora in some than in others. In conditions which tend to inhibit hydrolysis, therefore, the therapeutic efficacy of the drug can be expected to be diminished.

Daily quantitative stool counts revealed that typhoid bacilli were somewhat decreased in numbers but were still present and viable when large amounts of the drug were present in the bowel, whereas dysentery organisms disappeared completely and have not returned during a follow-up period of from thirty to sixty days. This suggests that mere seeding from the gallbladder was not responsible for failure to cure the typhoid carriers, and one can have no assurance that more favorable results would occur with intensive drug therapy following cholecystectomy.

Judging from these results, succinylsulfathiazole and sulfaguanidine appear to be equally effective in the treatment of dysentery carriers and equally ineffective in the treatment of typhoid carriers. However, the number of patients is small, and differences may become evident when more patients are studied. In cases of acute bacillary dysentery, hydrolysis of succinylsulfathiazole may be sufficiently impaired by diarrhea to render this drug less effective than sulfaguanidine. Favorable results have been reported in the treatment of acute bacillary dysentery, however, with ordinary sulfathiazole, in spite of the fact that this drug is largely absorbed from the gastrointestinal tract.[12] Whether the addition of the succinyl group, which inhibits absorption and permits smaller amounts of free sulfathiazole to be present throughout the entire bowel, will provide a more effective drug can be determined only by clinical trial. In vitro experiments indicate that sulfathiazole is a more powerful bacteriostatic and bactericidal agent than sulfaguanidine,[13] but so many variables exist that therapeutic efficacy cannot be accurately predicted on the basis of these results.

Succinylsulfathiazole has one outstanding advantage, namely that it is absorbed into the blood stream to a much smaller extent than sulfaguanidine and therefore is much less likely to cause reactions. No severe reactions have occurred with succinylsulfathiazole, either in the cases studied by Poth and his associates or in those reported here. This is further illustrated by the fact that 2 of the typhoid carriers, who suffered from severe nausea, vomiting and headache while taking sulfaguanidine, experienced no discomfort whatever during succinylsulfathiazole administration. The only symptoms associated with the ingestion of succinylsulfathiazole were a tendency to pass frequent, loose stools and to have slight perianal irritation, complaints too minor to inconvenience significantly any of the patients.

SUMMARY AND CONCLUSIONS

1. Succinylsulfathiazole has been found to produce a decided alteration of the physical characteristics and bacterial flora of the stools. It is only slightly absorbed from the gastrointestinal tract, producing blood levels of free sulfathiazole of less than 1 mg. per hundred cubic centimeters, and an average of less than 5 per cent is excreted in the urine.

12. Cooper, M. L.; Zucker, R. L., and Wagoner, Stewart: Sulfathiazole for Acute Diarrhea and Dysentery of Infants and Children, J. A. M. A. **117:** 1520 (Nov. 1) 1941.

13. Strauss, Elias; Dingle, J. H., and Finland, Maxwell: Studies on the Mechanism of Sulfonamide Bacteriostasis, Inhibition and Resistance, J. Immunol. **42:** 313 (Nov.) 1941.

2. The effectiveness of the drug is probably due entirely to hydrolysis in the gastrointestinal tract with the liberation of free sulfathiazole.

3. Dysentery bacilli disappeared from the stools of 5 carriers during succinylsulfathiazole administration and have remained absent for periods varying from thirty to sixty days.

4. Typhoid bacilli remained viable in the stools of 3 carriers during two weeks of drug therapy.

5. The only reactions noted were a tendency to pass frequent, loose stools and to have slight perianal irritation.

6. Since it is only slightly absorbed into the blood stream, succinylsulfathiazole is much less likely to produce severe toxic reactions than sulfaguanidine.

Clay and Webster streets.

SIGNIFICANCE OF NEUTRALIZING ANTIBODY IN EXPERIMENTAL EQUINE ENCEPHALOMYELITIS

A CONSIDERATION OF ITS RELATION TO THE DISEASE IN MAN: PRELIMINARY REPORT

R. WALTER SCHLESINGER, M.D.

ISABEL M. MORGAN, PH.D.

AND

PETER K. OLITSKY, M.D.

NEW YORK

Our purpose in this report is to direct attention to recent experimental studies which may be applicable to plans for vaccination of man against infection with equine encephalomyelitis virus. That there may be need for such vaccination in the face of an epidemic is indicated by recent events: 1. An apparent increase in the incidence of the human disease has occurred; in 1941 more than 3,000 clinically recognized cases due to the western virus were reported in the Northwestern states and in adjacent provinces of Canada.[1] 2. Western virus was isolated from mosquitoes,[2] from horses and from 1 prairie chicken [3] in endemic areas. 3. Since antibody to the same virus was found in a large variety of birds and mammals, they are suspected of being natural reservoirs of virus.[4] Thus the difficulty of eliminating all actual and potential sources of infection is indeed great.

The apparently good results obtained from vaccination of horses with formaldehyde inactivated chick embryo virus [5] have led to the suggestion of using similar immunization in man. Beard and his associates [6] have reported that vaccination of several persons resulted in the presence of demonstrable neutralizing antibody in their serums. We were able to confirm these results by the use of formaldehyde inactivated allantoic fluid from infected chick embryos.[7] Direct evidence is still lacking, however, as to whether the presence of such antibody will protect a vaccinated person against natural infection.

ANTIBODY TITER AS AN INDICATOR OF THE EFFICACY OF VACCINATION IN THE EXPERIMENTAL ANIMAL

The effect of specific immunization may be determined in two ways: the test dose for resistance is given either by a peripheral route, simulating the assumed natural mode of infection (mosquito bite), or by injection of virus directly into the central nervous system—the most stringent method. It has been found [8] that vaccination of susceptible young mice, when it induces neutralizing antibody, invariably renders them resistant to peripheral injection of active virus. The mere presence of such antibody, however, while insuring peripheral resistance, does not necessarily signify resistance to intracerebral inoculation. Such resistance is not encountered unless the antibody has reached a certain level—a level determined by titration of antibody by means of serum dilution.[9] This critical level has recently been defined on the basis of experiments in rabbits,[10] as follows:

We found that a vaccinated rabbit which had demonstrable antibody in its cerebrospinal fluid resisted intracerebral inoculation of a lethal dose of virus. The spinal fluid had the same neutralizing capacity as a three hundred fold dilution of serum. Conversely, if this antibody titer of the serum was not reached, antibody could not be detected in the spinal fluid, and the animal, as a rule, failed to resist the intracerebral test dose. The ratio agreed with what Freund [11] had previously established: in rabbits immunized with typhoid vaccine a constant ratio exists between the agglutinin titer of the spinal fluid and that of the serum. The ratio averages 1:300 and is of the same order of magnitude as that of blood free brain tissue to serum. Freund stressed the point that this ratio parallels that of normal globulins in the spinal fluid to those in the serum.

These results led to the suggestion that at the defined level antibody becomes available in sufficient concentration to arrest the spread of virus in the central nervous system. Thus the requirement for an effective vaccination is determined largely by the route by which the test dose or the natural infecting dose will enter the host.

An attempt was made to appraise the significance of neutralizing antibody in experimental infection of a type that, we assume, follows more closely than any other the natural infection.

From the Laboratories of the Rockefeller Institute for Medical Research.

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2. Hammon, W. M.; Reeves, W. C.; Brookman, Bernard; Izumi, E. M., and Gjullin, C. M.: Isolation of the Viruses of Western Equine and St. Louis Encephalitis from Culex Tarsalis Mosquitoes, Science **94**: 328 (Oct. 3) 1941.

3. Cox, H. R.; Jellison, W. L., and Hughes, L. E.: Isolation of Western Equine Encephalomyelitis Virus from a Naturally Infected Prairie Chicken, Pub. Health Rep. **56**: 1905 (Sept. 26) 1941.

4. Howitt, Beatrice F., and van Herick, William: Neutralizing Antibodies Against St. Louis and Western Equine Encephalitic Viruses in Horses and Fowl, Proc. Soc. Exper. Biol. & Med. **48**: 247 (Oct.) 1941. Hammon, W. M.; Gray, J. A.; Evans, F. C.; Izumi, E. M., and Lundy, H. W.: Western Equine and St. Louis Encephalitis Antibodies in the Sera of Mammals and Birds from an Endemic Area, Science **94**: 305 (Sept. 26) 1941.

5. Mohler, J. R.: Report of the Chief of the Bureau of Animal Industry, 1941, U. S. Dept. Agric., Bureau of Animal Industry, Washington, D. C., Sept. 15, 1941, pp. 56-57; Report on Infectious Equine Encephalomyelitis in the United States in 1939, ibid., Jan. 20, 1940, pp. 1-5. Lyon, B. M.: Present Status of Equine Encephalomyelitis and Its Control, Cornell Vet. **29**: 198 (April) 1939.

6. Beard, J. W.; Beard, Dorothy, and Finkelstein, Harold: Vaccination of Man Against the Virus of Equine Encephalomyelitis (Eastern and Western Strains), J. Immunol. **38**: 117 (Feb.) 1940. Beard, Dorothy; Finkelstein, Harold, and Beard, J. W.: Repeated Vaccination of Man Against the Virus of Equine Encephalomyelitis, ibid. **40**: 497 (April) 1941.

7. Unpublished observations from our laboratory.

8. Morgan, Isabel M.: Influence of Age on Susceptibility and on Immune Response of Mice to Eastern Equine Encephalomyelitis Virus, J. Exper. Med. **74**: 115 (Aug.) 1941.

9. Morgan, Isabel M., and Olitsky, P. K.: Immune Response of Mice to Active Virus and to Formalin-Inactivated Virus of Eastern Equine Encephalomyelitis, J. Immunol. **42**: 445 (Dec.) 1941.

10. Morgan, Isabel M.; Schlesinger, R. W., and Olitsky, P. K.: Neutralizing Antibodies in the Cerebrospinal Fluid in Relation to Cerebral Resistance to Equine Encephalomyelitis Virus, (abstr.) J. Bact. **43**: 83 (Jan.) 1942; to be published.

11. Freund, J.: Accumulation of Antibodies in the Central Nervous System, J. Exper. Med. **51**: 889 (June) 1930.

CORRELATION BETWEEN DEGREE OF IMMUNE RESPONSE AND OUTCOME OF INFECTION AFTER PERIPHERAL INOCULATION IN NONVACCINATED EXPERIMENTAL ANIMALS

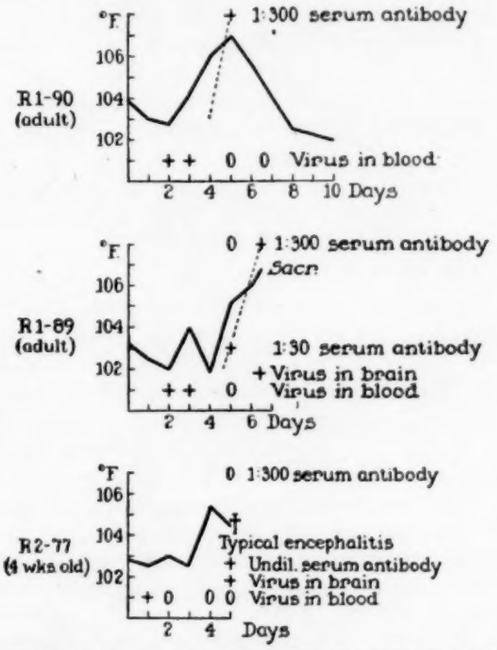
The susceptibility of mice to equine encephalomyelitis virus injected peripherally decreases with increasing age.[12] Morgan [8] was able to show that this change in susceptibility parallels an increase in capacity for a rapid immune response. The difference between young and old exists despite the fact that the two are found to be almost equally susceptible to the virus given intracerebrally. More recently the course of the infection following subcutaneous injection of western virus has been studied in rabbits. Adult rabbits showed no clinical signs of infection. Certain ones, however, had a characteristic febrile reaction which resembled that seen in monkeys,[13] horses [14] and guinea pigs [15] after similar inoculation; in such rabbits virus could be demonstrated in the circulating blood for one to three days after injection. In some instances the blood stream infection concurred with an early, moderate rise in temperature. High fever occurred only after virus had disappeared from the circulation and had been replaced by demonstrable neutralizing antibody. In spite of the presence of such antibody in the serum, virus could be demonstrated in the brains of rabbits killed at the time when the fever reached its highest peak. On the other hand, defervescence occurred characteristically in those animals which were not killed; in most cases it set in five to six days after injection and coincided with a rise in serum antibody titer to 1:300. Several young, i. e. 4 weeks old, rabbits died of typical encephalitis following subcutaneous inoculation of western virus. Typical signs or death occurred before antibody could be detected in their serums at a 1:300 dilution, as shown in the chart.

These observations were interpreted as indicating that the inapparent infection of the central nervous system in the adult rabbit had been arrested when neutralizing antibody had reached, at the critical time, the level at which it became available to the central nervous system.

THE HUMAN INFECTION IN THE LIGHT OF EXPERIMENTAL DATA

In man as in horses,[14] monkeys, guinea pigs [13] and rabbits after peripheral injection, the course of an infection with equine encephalomyelitis virus ranges from that of mild abortive infection to severe encephalitis, leading to death or recovery, sometimes with sequelae. Inapparent infections occur which are recognized only because they lead to the presence of neutralizing antibody.[16] With the exception of the epidemic reported by Hammon,[17] all outbreaks have been characterized by a relatively high incidence of frank cases among infants and children.[18]

If the human infection follows the pattern of infection in the experimental animal after peripheral inoculation, the presence of antibody is preceded by the transitory circulation of virus in the blood. Such circulation may or may not lead to an invasion of the central nervous system. If it does, the outcome of the disease may depend, as it does in the rabbit, at least in part on the degree of immune response of which the individual is capable. Howitt [19] recently found antibody to western virus in the spinal fluid not only of monkeys surviving experimental infection but also of 17 out of 20 human convalescents whose serums neutralized the virus. Her results fortify us in the view that recovery from an infection of the central nervous system with the equine virus is correlated with the availability of neutralizing antibody to the central nervous system and



Subcutaneous injection of western equine encephalomyelitis virus in rabbits: R 1-90, effect on adult rabbit. To be noted are the febrile reaction, the time of circulating virus and the relation of antibody titer to defervescence. R 1-89 is similar to R 1-90 except that this adult rabbit was killed and the presence of virus in the brain in relation to the other factors is represented. R 2-77, effect on a young rabbit. Fatal encephalitis: failure to reach antibody titer of 1:300 at time of death.

that its demonstration in the spinal fluid is an indication of this availability.

The evidence at present indicates that the mode of infection of man is by the mosquito bite and thus may be analogous to "peripheral" inoculation in the experimental animal. We would therefore postulate that circulating antibody such as has been induced in man by vaccination [20] would neutralize the virus in the general circulation before it could reach the central nervous system, as it does in the vaccinated animal.[8] These considerations, and the fact that the results of

12. Sabin, A. B., and Olitsky, P. K.: Variations in Pathways by Which Equine Encephalomyelitic Viruses Invade the Central Nervous System of Mice and Guinea-Pigs, Proc. Soc. Exper. Biol. & Med. **38**: 595 (May) 1938; Age of Host and Capacity of Equine Encephalomyelitic Viruses to Invade the Central Nervous System, ibid. **38**: 597 (May) 1938.

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14. TenBroeck, Carl; Hurst, E. W., and Traub, Erich: Epidemiology of Equine Encephalomyelitis in the Eastern United States, J. Exper. Med. **62**: 677 (Nov.) 1935.

15. Hurst.[13] TenBroeck, Hurst and Traub.[14]

16. Olitsky, P. K., and Morgan, Isabel M.: Protective Antibodies Against Equine Encephalomyelitis Virus in the Serum of Laboratory Workers, Proc. Soc. Exper. Biol. & Med. **41**: 212 (May) 1939. Buss, W. C., and Howitt, Beatrice F.: Human Equine Encephalomyelitis in Kern County, California, 1938, 1939 and 1940, Am. J. Pub. Health **31**: 935 (Sept.) 1941.

17. Hammon, W. M.: Encephalitis in the Yakima Valley, J. A. M. A. **117**: 161 (July 19) 1941.

18. Feemster, R. F.: Outbreak of Encephalitis in Man Due to the Eastern Virus of Equine Encephalomyelitis, Am. J. Pub. Health **28**: 1403 (Dec.) 1938. Leake.[1] Buss and Howitt.[16]

19. Howitt, Beatrice F.: Development of Neutralizing Antibodies to the Viruses of Equine Encephalomyelitis (Western Strain) and St. Louis Encephalitis in the Blood and Cerebrospinal Fluid of Man and Animals, Together with Recovery of the St. Louis Virus from the Blood of Monkeys, J. Immunol. **42**: 117 (Oct.) 1941.

20. Beard, Beard and Finkelstein.[6] Beard, Finkelstein and Beard.[6] Unpublished observations.[7]

vaccination of horses are good, lead us to believe that vaccination of human beings is justified in the face of an epidemic.

SUMMARY

1. Specific immunization of rabbits protects against an intracerebral test inoculation of equine encephalomyelitis virus only when the antibody in the serum reaches a titer of 1 : 300 or higher. At this level antibody becomes demonstrable in the cerebrospinal fluid, and this is believed to be an indicator of its availability to the central nervous system. It had already been shown that a low titer of serum antibody in vaccinated young mice was sufficient to indicate resistance to peripheral inoculation of this virus.

2. Subcutaneous injection of active western virus in adult rabbits may lead to clinically inapparent virus invasion of the central nervous system, characterized by high fever and preceded by the presence of virus in the blood. Such infection of the nervous system takes place at a time when antibody is being produced. Defervescence and recovery set in as the antibody titer of serum reaches 1 : 300 (at about five to six days after injection).

3. Young (4 weeks old) rabbits, similarly injected, die of encephalitis before this antibody level has been reached.

4. Infection of man with equine encephalomyelitis virus and its possible prevention by vaccination are discussed in the light of experimental findings.

Sixty-Sixth Street and York Avenue.

PNEUMONIA IN A RURAL PRACTICE

ITS INCIDENCE AND MORTALITY

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This paper has as its object the portrayal of the care of pneumonia patients and the results of such care by the general practitioner or family doctor in an average rural American community. The community involved is a town of 435 population in a strictly agricultural district. It is felt that such practices typify customary rural treatment of pneumonia and its results under the American system of medicine. Contrast of this work with similar studies conducted in urban and teaching centers provides a yardstick by which to measure the average medical care in rural United States.

On Jan. 1, 1937 the Minnesota Department of Health started typing sputum for pneumococci without cost to the patient or attending physician. When requested, type specific serum was provided at cost, or without cost if the patient was unable to pay.

As will be recalled, this was before the use of the sulfonamides. Type specific serum had been used extensively in many of the large urban centers. An increasing number of reports from these cities showed reduction in the mortality rate of pneumonia by the use of type specific serum.

These developments suggested several interesting problems regarding pneumonia in a rural practice. One question involved incidence. Influenza, or "flu," often was diagnosed when influenza had not occurred in other districts. Further than that, one reputable physician had so few influenza cases and so many pneumonia cases that he engendered the ridicule of his confrères. The question then was "Might not many of the so-called influenza cases be pneumonia, or might not the incidence of pneumonia in rural areas be higher than is commonly believed?"

And the second question involved the mortality of pneumonia in rural practice. While many of the reports of the mortality of pneumonia in teaching and urban centers were available, no work had been done by which a comparison could be made of the rural and urban pneumonia mortality.

With these ideas in mind, on Oct. 1, 1937 a routine procedure of handling all suspected cases of pneumonia seen in rural practice was planned. Cases were considered as suggestive of pneumonia when the symptoms included chills, fever, cough, purulent or blood stained sputum, pain in the chest, vomiting or prostration. The finding of rales, bronchial or bronchovesicular breathing and evidence of consolidation on percussion or palpation were sufficient to classify the case as one suggestive of pneumonia. When either the symptoms or the physical signs aroused suspicion, a specimen of sputum was sent by bus or train to the Minnesota Department of Health. If the sputum examination revealed a definite type of pneumococci, serum was administered within twenty-four hours of the time the patient was first seen. Later, when the sulfonamides could be had, chemotherapy was started immediately after the sputum specimen had been secured. This delay was solely to avoid interference with typing.

TABLE 1.—*Incidence of Types of Pneumococci*

Type	No. of Cases
I	21
II	2
III	6
IV	1
V	4
VI	12
VII	6
VIII	9
XIV	2
XIX	10
IX, X, XI, XVI, XVII, XVIII, XIX	4 each
X	3
XV, XXXI, XXXII, XII, XXI, XXII	2 each
XXIX, XXXIII	1 each
Total of types	115

TABLE 2.—*Age Incidence of Pneumonia in Present Series*

Age	Cases	Per Cent
0 to 4	33	28.2
5 to 9	16	13.7
10 to 14	7	5.9
15 to 24	11	9.4
25 to 44	13	11.2
45 to 64	20	17.1
65+	17	14.5
Total	117	100.0

INCIDENCE

Following these criteria for sputum typing, during four and one-half years, from Oct. 1, 1937 to April 1, 1942, 117 proved cases of pneumococcic pneumonia were encountered. The frequency of types as determined by the Minnesota Department of Health is given in table 1.

This tabulation shows that only 115 of the 117 cases were actually typed. One of the remaining 2 cases

Clinical collaboration was given by Dr. P. A. Swedenburg and Dr. W. M. Schulze, and statistical assistance by Dr. W. R. Murlin.

was proved by x-ray examination and the other by consultation. The last mentioned case was one of the earliest of the series in which death was an important factor in initiating this study.

Age analysis showed ages ranging from 4 weeks to 83 years. There were 70 males and 47 females, a ratio of 60 to 40, or 3 males to every 2 females. Table 2, of age incidence, reveals a higher incidence of pneumonia in the age group 0 to 4 years than is customarily seen.

As can be seen in chart 1, the age incidence in pneumonia cases conforms in a general way with the incidence of pneumonia deaths in Minnesota as plotted by the Minnesota Department of Health for one year, 1940.

Seasonal incidence, as shown in table 3 and chart 2, conforms in general with statistics of deaths from pneumonia for the state of Minnesota during the year 1940 and also with other series.

Of even greater interest, however, are some of the clinical facts revealed. Only 19 of the 117 patients were hospitalized. X-ray films confirmed the diagnosis in 18 cases, the other hospitalized case presenting a postpneumonic empyema. White blood cell counts were performed for as many cases as possible, but records of these were not kept. Complications occurred in

TABLE 3.—*Seasonal Incidence of Pneumonia in Present Series*

Month	No. of Cases
January	7
February	16
March	21
April	11
May	12
June	6
July	3
August	2
September	4
October	5
November	10
December	20
Total	117

39 cases. Of these, cardiac disturbances varying from auricular fibrillation to coronary occlusion and decompensation were the most frequent. Empyema, asthma, bronchiectasis and effusion occurred in 1 or more instances. Otitis media was not infrequent in the younger patients. Nephritis, kidney hemorrhage and prostatic obstruction occurred. In 1 case, chronic alcoholism was present.

The history or symptomatology was suggestive of pneumonia and consequently was considered positive in 100 per cent of the cases. Contrasted with this, physical findings were typical or positive in only 96, or 83 per cent of the cases. This fact is unquestionably related to the high incidence of childhood cases. Of the 117 patients, 28 per cent were under 5 years of age and 14 per cent additional occurred up to 10 years of age; or a total of 42 per cent of the patients were children under 10 years old. But also it is confirmatory of Reimann's concept as expressed in his book, "The Pneumonias," which states "I believe that a person with or without a mild upper respiratory tract infection who has a chill, fever of over 102 F., cough, pleuritic pain, tachypnea and blood tinged sputum has a pneumonia."

The present study, then, involved 117 cases of pneumonia proved by bacterial typing during a four and one-half year period after Oct. 1, 1937. To compare this incidence with an analogous period in the same practice, records were reviewed for four and one-half years prior to that time. During the first four and one-half year period, only 80 cases of pneumonia were encountered. Approximately 50 per cent more cases of

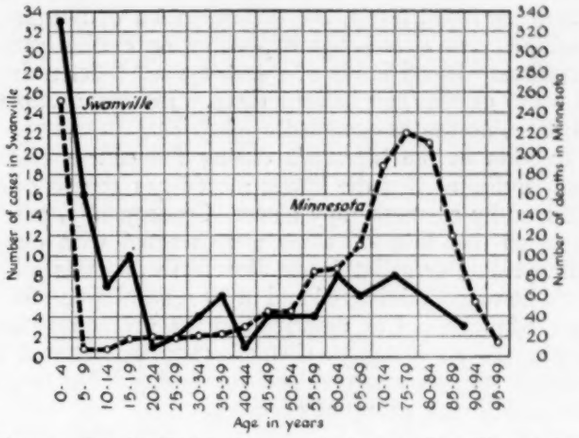

Chart 1.—Age distribution of pneumonia cases in Swanville and pneumonia deaths in Minnesota.

pneumonia were seen in the same practice in a like period of time when it was possible to prove the bacterial etiology of the pathologic process. Of significance also seems the frequency of such diagnoses as "flu," bronchitis and upper respiratory infection in the earlier period as compared with their infrequency in the present study period.

Consequently, from the foregoing analysis the statement seems justified that the incidence of pneumonia in rural practice is higher than its diagnosis in the past has indicated. In spite of the frequent absence of typical or pathognomonic physical findings of pneumonia, many cases diagnosed as influenza or bronchitis with proper bacterial study and typing should be classified as pneumococcic pneumonia.

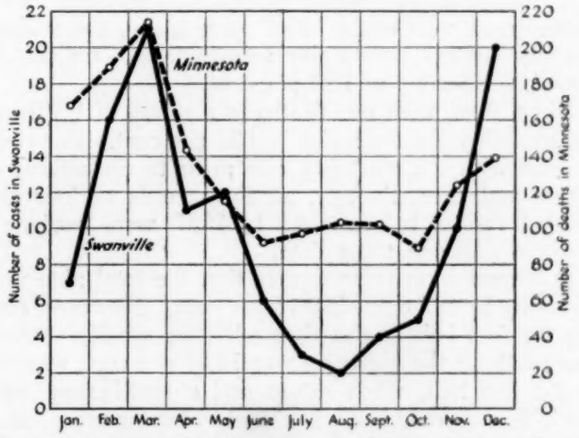

Chart 2.—Seasonal distribution of pneumonia cases in Swanville and pneumonia deaths in Minnesota.

MORTALITY RATE

During the early part of the study, serum was given as quickly as it was received, the dosage varying with age, length of illness, type, complications and severity. Only 19 patients received serum alone, and of these 1 died, a mortality of 5.3 per cent.

When the sulfonamides became available, 26 patients had both serum and chemotherapy. Twenty-five were given serum and sulfapyridine, and 1 patient had serum and sulfathiazole. Both drugs were administered in the doses customarily recommended in the literature except that the first dose was 1 Gm. rather than the 2 to 4 Gm. often advised. In rural practice it is not possible to determine blood levels, the determination of adequacy, inadequacy or overdosage depending on clinical manifestations. Blood levels of the drugs were determined in some of the hospitalized cases. In this group of 26 cases, no deaths occurred.

Reports in the literature during the course of the study indicated that the lowest mortality rate was often obtained by chemotherapy alone. Consequently, subsequent to this time 46 cases were treated with either sulfapyridine or sulfathiazole alone. In 36 cases sulfapyridine was administered and in 10 sulfathiazole. Both were administered as described in the preceding paragraph. In all instances chemotherapy was started as soon as sputum was obtained for typing. No deaths occurred in this group of 46 cases.

TABLE 4.—*Pneumonia Cases During Nine Year Period*

	Time		
	4½ Years Before 10/1/37	4½ Years After 10/1/37	Total and Average
Total cases	80	117	197
Serum			
Cases	..	19	..
Percentage of mortality	..	5.3	..
Chemotherapy			
Cases	..	46	..
Percentage of mortality	..	0.0	..
Serum and chemotherapy			
Cases	..	26	..
Percentage of mortality	..	0.0	..
Neither serum nor chemotherapy			
Cases	80	26	106
Percentage of mortality	16.25	15.4	15.82
Total percentage of mortality	16.25	4.27	9.15

Throughout the study period, 26 patients were encountered who could be or were given, for various reasons, neither serum nor sulfonamides. Of the 26 4 died, a mortality of 15.4 per cent.

Thus, then, with five deaths in a group of 117 cases the mortality for the series is 4.27 per cent. For comparison with the mortality rate prior to the advent of serum and chemotherapy, all the records of four and one-half years before Oct. 1, 1937 were reviewed. Table 4 presents these data.

It is seen from these figures that the total nine year mortality in 197 cases is 9.15 per cent. However, during the first half of this time when no specific therapy was available the mortality was 16.25 per cent, whereas in the last half, when serum and chemotherapy were used, it was only 4.27 per cent. Furthermore, it is significant that all 13 of the deaths in the first group of 80 cases and 4 of the 5 deaths in the last series of 117 cases occurred among patients who had neither serum nor chemotherapy. In this total group of 106 cases the mortality rate was 16.04 per cent. This fact accentuates the efficacy of serum and chemotherapy, especially when it is noted that 5.3 per cent mortality occurred in the serum treated cases and no deaths occurred in the chemotherapy group or in the combined serum and chemotherapy group. It is recognized that the series is far too small to permit irrefutable deductions to be made.

Some consideration should be given to the 5 fatal cases:

CASE 1.—C. F., a man aged 60, had had a mild coronary occlusion two years prior to his death. Throughout his illness he was attended by a chiropractor. Medical attendance was confined to two country house calls on the fourth day of illness and the day before his death. It was not possible to obtain sputum for typing. Chemotherapy was not available at this time.

This case was one of the principal factors in the inauguration of this study.

CASE 2.—Mrs. E. N., aged 83, died of type III pneumococcus pneumonia in spite of serum administration. She had a severe serum reaction; 40,000 units was used; her heart began to fibrillate; she died on the fourth day of illness.

CASE 3.—Mrs. J. B. S., aged 68, was sick four days before being seen by a physician. Impassable snow drifts made calling or attendance earlier impossible. She had a type I pneumococcus pneumonia. Chemotherapy was not available. She died within twenty-four hours of the time she was first seen and before serum could be administered.

All these patients had lobar consolidations, as determined by physical examination.

CASE 4.—C. H., a man aged 81, had been confined to bed for a month as a result of decompensation due to an arteriosclerosis-hypertension syndrome. He developed a severe respiratory infection, was found to have bronchopneumonic, patchy consolidation, and sputum typing revealed type XI pneumococci. He lived 14 miles in the country and died before either serotherapy or chemotherapy could be started.

CASE 5.—O. G., a man aged 58, had been confined to bed for four months before the onset of pneumonia, suffering from repeated and severe episodes of coronary occlusion. His heart was decompensated at the time of his death, and a week prior to death pulsus alternans was observed on several occasions. Physical examination failed to disclose lobar consolidation, yet evidences of patchy, diffuse consolidations were found. Typing of sputum revealed type XVII pneumococci. Neither chemotherapy nor serotherapy was used.

Both of the last 2 cases, it is felt, should best be attributed to a terminal sequence of bronchopneumonia induced by the cardiac condition. Nevertheless they were both known to be pneumococcic pneumonia and for that reason are included in the present study.

COMPARISON WITH OTHER STUDIES

For comparison, nineteen series involving 32,352 cases in urban and teaching centers have been collected from the literature. They are shown in table 5.

It is notable that in this compilation the mortality of 9.86 per cent in 17,186 cases for which chemotherapy alone was used is lower than that of any other group. This fact is borne out also in the Swanville series. In this tabulation, mortality in the serotherapy group, 15.48 per cent, is lower than that of the groups in which both serotherapy and chemotherapy were used. The truth of this fact is supported by many individual series and compilations of many series. Another characteristic finding is a mortality of 31 per cent among 1,310 cases in which no specific therapy was administered. In this regard, Flippin, Reinhold and Schwartz [1] have

1. Flippin, H. F.; Reinhold, J. G., and Schwartz, L.: Sulfapyridine and Sulfathiazole Therapy in Pneumococcic Pneumonia, J. A. M. A. **116**: 683-689 (Feb. 22) 1941.

stated that the mortality of 12 per cent (corrected to 7.4 per cent) in the group of 100 sulfathiazole patients and of 15 per cent (corrected to 11.4 per cent) in the comparable sulfapyridine series compares favorably with the previous mortality rate of approximately 35 per cent at the Philadelphia General Hospital in the years preceding use of these chemotherapeutic agents.

Comparison of the total mortality in the urban and rural series shows a mortality in the former of 11.85 per cent and in the latter of 9.15 per cent. In the urban series are included cases of Stahle,[2] Price and Myers,[3] Finland, Lowell and Strauss,[4] Evans and Gaisford,[5] Schwartz, Flippin and Turnbull[6] and Finland, Spring and Lowell,[7] in which specific therapy was not administered. In all there were 1,310 such cases, with a mortality of 31 per cent. When these cases are deducted from the total and the mortality is corrected accordingly, the total mortality rate is found to be 8.9 per cent. Similarly in the rural series, when the 80 cases seen in the first four and one-half years, when no specific therapy was available, are deducted from the total, a mortality of 4.27 per cent is found. While it is true that a similar treatment of the two series suggests that deduction of 26 cases with four deaths in which no specific therapy was used would reduce the total mortality in the rural series to 1.1 per cent, it is felt that conditions peculiar to rural practice make inclusion of this group necessary for proper comparison of urban and rural practices.

TABLE 5.—*Urban Pneumonia Cases Collected from Literature*

Authors	Location	Number of Cases	Serum		Chemotherapy		Serum and Chemotherapy		No Serum or Chemotherapy		Total % of Mortality
			Cases	% of Mortality	Cases	% of Mortality	Cases	% of Mortality	Cases	% of Mortality	
Stahle [2]	Pennsylvania State	15,251	181	14.92	12,913	9.31	1,787	16.55	370	18.65	9.19
Long P. H., and Wood, W. B., Jr.: Ann. Int. Med. **13**: 487 (Sept.) 1939	Baltimore	139	31	.....	100	....	8	.....	...	.....	7.2
Flippin, Reinhold and Schwartz [1]	Philadelphia	400	..	.....	...	....	37	35.1	...	.....	9.8
Plummer, et al.: J. A. M. A. **116**: 2366 (May 24) 1941	New York	607	..	.....	306	9.3	301	9.8	...	.....	9.5
Finland, M.; Strauss, E., and Peterson, O. L.: J. A. M. A. **116**: 2641 (June 14) 1941	Boston	178	..	.....	178	10.7	...	.....	...	.....	10.7
Price and Myers [3]	Detroit	249	40	27.5	115	15.7	...	.....	94	30.8	23.3
Calloman, V. B., and Goodpastor, W. E.: Ann. Int. Med. **14**: 1024 (Dec.) 1940	Pittsburgh	50	..	.....	50	8.0	...	.....	...	.....	8.0
Smith, F. E.; Riley, R., and Jones, O. R.: Ann. Int. Med. **14**: 1033 (Dec.) 1940	New York	122	..	.....	122	6.5	...	.....	...	.....	6.5
Winters, W. L.: Rhoads, P. S.; Fox, W. W., and Rosi, R.: Ann. Int. Med. **14**: 1827 (April) 1941	Chicago	123	..	.....	123	11.4	...	.....	...	.....	11.4
Pepper, D. S.; Flippin, H. S.; Schwartz, L., and Lockwood, J. S.: Am. J. M. Sc. **198**: 22, 1939	Philadelphia	400	..	.....	400	7.0	...	.....	...	.....	7.0
Gaisford, W. F.: Proc. Roy. Soc. Med. **33**: 1070, 1939	England	400	..	.....	400	6.5	...	.....	...	.....	6.5
Kohlstaedt, K. G., and Page, I. H.: Ann. Int. Med. **14**: 127 (July) 1940	Indianapolis	50	..	.....	50	6.0	...	.....	...	.....	6.0
Flippin, H. F.; Schwartz, L., and Clark, J. H.: Ann. Int. Med. **14**: 1909 (May) 1941	Philadelphia	800	..	.....	800	10.0	...	.....	...	.....	10.0
Finland, Lowell and Strauss [4]	Boston	911	..	.....	599	15.8	88	19.3	220	49.5	24.4
Long, P. H., and Haviland, J. W.: Ann. Int. Med. **14**: 1042 (Dec.) 1940	Baltimore	815	486	19.3	329	7.6	...	.....	...	.....	14.6
Evans and Gaisford [5]	England	200	...	.....	100	8.0	...	.....	100	27.0	17.5
Schwartz, Flippin and Turnbull [6]	Philadelphia	351	50	10.0	233	9.0	14	7.1	54	31.5	12.5
Finland, Spring and Lowell [7]	Boston	1,037	211	13.3	225	17.8	129	24.0	472	28.6	22.6
Thompson, L. D.; Edwards, J. C., and Hoaglund, C. L.: Ann. Int. Med. **13**: 1138 (Jan.) 1940	St. Louis	269	126	7.9	143	9.09	...	.....	...	.....	8.5
Totals and averages		32,352	1,125	15.48	17,186	9.86	2,364	18.64	1,310	31.0	11.85

SUMMARY

Only 80 cases of pneumonia were found in rural practice in four and one-half years prior to pneumococcus typing of all suspected cases of pneumonia. Following establishment of a routine for the diagnosis of pneumonia which included typing, 117 cases of penumonia were seen in the same rural practice during a similar period of four and one-half years. This represents an increase of incidence of 46 per cent.

Results of the use of serum and chemotherapy are reflected in a reduction of mortality from 16.25 per cent in the 80 cases treated symptomatically to 4.27 per cent in 117 cases treated after the advent of specific therapy.

Comparison of urban and rural mortality in pneumonia shows a mortality of 11.85 per cent in 32,352 urban cases and a mortality of 9.15 per cent in 197 rural cases. These rates, corrected by the deduction of 1,310 cases with 31 per cent mortality from the urban series and 80 cases with 13 deaths from the rural series, are found to be 8.9 per cent and 4.27 per cent respectively.

CONCLUSIONS

1. Based on the present study, the statement seems justified that the incidence of pneumonia in the average rural American practice, when all suspected pneumonia cases are subjected to a diagnostic routine which includes bacterial study and typing of sputum specimens, is higher than is commonly supposed.

2. From the present study it appears that the mortality of pneumonia in the average rural American community compares favorably with that of urban and teaching centers.

2. Stahle, D. C.: A Clinical Analysis of Fifteen Thousand Cases of Pneumonia: An Evaluation of the Effectiveness of Various Therapeutic Agents, J. A. M. A. **118**: 440-447 (Feb. 7) 1942.

3. Price, A. E., and Myers, G. B.: Treatment of Pneumococcic Pneumonia with Sulfanilamide, J. A. M. A. **112**: 1021-1027 (March 18) 1939.

4. Finland, Maxwell; Lowell, F. C., and Strauss, Elias: Treatment of Pneumococcic Pneumonias with Sulfapyridine, Sulfathiazole and Serum: Analysis of the Results of Specific Therapy at the Boston City Hospital from July 1939 Through June 1940, Ann. Int. Med. **14**: 1184-1199 (Jan.) 1941.

5. Evans, G. M., and Gaisford, W. F.: Treatment of Pneumonia with 2-p (Aminobenzenesulfonamido) Pyridine, Lancet **2**: 14 (July 2) 1938.

6. Schwartz, Leon; Flippin, H. F., and Turnbull, W. G.: Treatment of Pneumococcic Pneumonia: A Comparative Study of 351 Patients Treated at the Philadelphia General Hospital, Ann. Int. Med. **13**: 1005-1012 (Dec.) 1939.

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THE WAR AND THE PROBLEM OF AGING

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Professor Sherman [1] has pointed out that by the time a professional man has finished his schooling about one third of his life has passed; another third will be spent in proving to himself and others what he is able to do, and in most cases not until about the age of 50 does he attain or is he promoted to a post of high responsibility and given the fullest opportunities to do his work.

This statement is in general true also for civil servants and men in the armed forces and in industry.

Therefore the physiology and pathology of aging becomes a war problem, and for medicine it is especially important to decide whether there are available or there can be found any practical means of helping the older man to keep fit both physically and mentally and so to perform his work in the best possible way. As will be discussed in more detail in a later paragraph, the problem cannot be solved by transferring responsible posts to young men who are neither experienced nor sufficiently tested; nor from the point of view of modern science and medicine is there any necessity to do this.

Aging of functions starts in human beings at the latest at the age of 30, of some functions even earlier. This statement is particularly well supported by the numerous and convincing observations of Koga and Morant,[2] Ruger and Stoessiger [3] and Elderton, Moul and Page [4] in the Galton Laboratory for National Eugenics and by Professor Miles and his co-workers [5] in the departments of psychology of Stanford and Yale universities. In the Galton Laboratory about 7,000 men and 1,850 women and in Miles' Laboratories about 820 persons were tested at different ages. Ergographic examination of muscular activity and psychologic tests of sensory and mental faculties were performed on these persons, and the results obtained at different ages were statistically examined and tabulated.

There is no room here for a discussion of the differences and variations observed among the effects of aging on the different functions. As a general conclusion on the basis of the results obtained it is possible to state that for most of the functions examined a decrement set in at least at the age of 30 and in the case of some of the faculties examined at the age of 20 or even earlier. For example, careful investigation of bone sensibility to vibration by Pearson [6] and also by Egger [7] and Piercey [8] has established that this sensibility is greatest in children and in adolescents. The maximum acuity of audible pitch probably occurs at the age of 5 to 13 (Koga and Morant; [2] Ruger and Stoessiger; [3] Elderton, Moul and Page; [4] Ciocco [9]). The range of accommodation in the eye is greatest at birth, after which it proceeds to decrease with remarkable uniformity as age progresses (Friedenwald [10]). According to Bernstein,[11] the measure of accommodative power of the eyes might serve well as an index of the degree of senescence of the individual from his earliest years.

Minot [12] on the basis of cytomorphosis, Robertson and his co-workers [13] drawing their conclusions from the decline in the nucleocytoplasmic ratio (estimated chemically) in organs and tissues during aging and I [14] in an analysis of the data establishing the decrease from infancy of relative weights of vital organs with aging all considered that the aging process of "wear and tear" of organs and tissues starts in all probability in early infancy (I have previously published details of this theory [14]). However, the conclusion that the prime of life is early infancy needs further investigation from different angles. Especially it needs to be adjusted to the results obtained with psychologic and ergographic technic (the prime of life occurs in adolescent or early adult life) and to the observations (submitted later) of Lehman,[15] who came to the conclusion that the greatest mental productivity was on the average recorded at the age of 30.

Thus if a logical conclusion is based only on the average age at which the definite beginning of aging of most functions is observed, all responsible key posts should be given to persons at the age of 25 to 30.

CONSIDERABLE DECLINE OF MOST FUNCTIONS (ON THE AVERAGE) AT THE AGE OF SIXTY OR EVEN EARLIER

Although some excellent work has been done on aging, there is no doubt that further investigations are badly needed for confirmation and development of the results already obtained and for elucidation of several new points. From the data available, however, it is possible to suggest, as a general statement, that when human beings reach the age of 60 a considerable degree of decline occurs, as a rule, in most of their functions. For many functions (e. g. visual acuity, vibratory sensibility, even apparently some of the higher mental processes as measured by special tests) considerable decrement can be found earlier, more often at the age of 50.

One special change of mentality which may occur in older persons deserves great attention in connection with

Prof. R. A. Fisher gave the author helpful criticism and encouragement, and Mrs. B. Clapham did the statistical calculations and prepared the tables. For economy of space, the tables are not included in the paper.

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any responsible activity, in particular defense and war work. This change is best described and its important peculiarities best characterized by Professor Henderson and Dr. Gillespie:[16]

Simple senile deterioration is the name given to the simpler form of senile change, and is within the limits of the normal. There is progressive narrowing of interest. The power of comprehension becomes less elastic, and thought becomes sluggish. The individual sticks to an idea obstinately, and dislikes departure from the beaten track of his daily routine (the "misoneism" characteristic of the aged). When anything new is suggested, he resents it with the protest that the old ways are best. . . . Failure of memory is a very prominent feature. . . . The situation varies with the individual case. There are those who despite the passage of years retain their physical vigor and mental faculties to a surprising degree, while others, at a much younger age, become old both in body and mind.

Professor Saundby[17] has written on this point (pp. 63-64):

While the intelligence of the aged is often conserved, the senses suffer . . . new ideas are accepted with difficulty and often with dislike; intellectual effort, if long continued, becomes painful, and the power of sustained attention becomes weakened . . . it becomes increasingly difficult for them to make up their minds to any new course of conduct. . . . [pp. 37]: Imagination also is weakened, invention fails, the emotions are subdued, the brain reacts less promptly to the external stimuli and assimilates new ideas less readily.

Sir Farquhar Buzzard[18] comes to a similar conclusion:

If a man's neural sensitivity is the index of his age, its decline [in old age] is expressed by his difficulty in retaining fresh impressions, his reluctance to forming new associations, and his inadequacy to unaccustomed impulses.

Cannon and Tranchell-Hayes[19] emphasize (p. 269):

The earliest symptoms of senility is an inability to find any good in the present state of affairs and a tendency to glorify the past. Increasing conservatism and obstinacy are noted.

The same point is emphasized by Professor Hollingsworth[20] (p. 315):

Old age is thus conservative, reactionary, and resistant to the newer ways of the younger generation. . . . In so far as he [old man] is still in power, he tends to foist upon the changing generation the older standards of conduct, the old ideas and institutions.

Lhermite and Nicolas[21] come to similar conclusions and stress especially the weakening of creative imagination in senescence.

EARLY OR VERY LATE AGE AT WHICH THE SYMPTOMS OF SENILITY MAY DEVELOP

With a summary of the data presented, it is possible to conclude that in terms of statistical averages there is no function so far investigated in which decrement does not appear with aging.

Allbutt[22] rightly said, however (p. 117):

In medicine we do not count the ages of people by the revolutions of the earth round the sun, but we measure them by the revolution of their own morbid processes.

Sadler[23] emphasizes the same point (p. 909):

It must be remembered however . . . that age in the mental realms as in the physical organism, is not merely a matter of years. Some individuals are as old or older at 40 than others are at 60 or even 65.

Professor Tilney[24] is especially emphatic in his practical comments on the subject (pp. 1142-1143):

In the matter of our mental attitude towards old age progress is also needed.

The later years of life should no longer be regarded as the time for retirement, as the days of patient waiting. . . . Ripe in experience, rich in the gifts of wisdom, is it right for a man to retire simply because his years are many? Not if he has a brain which is healthy and firm and capable of serving his fellow-men.

Professor Lehman (1936)[15] has found that the majority of outstanding contributions by physicists, chemists and inventors were made at 30 to 34 years. On the other hand, he emphasizes that this average figure should under no condition imply that a man's best work could not be performed at an older age. Thus, in a group of chemists 34 per cent made their first and only important contribution after the age of 40, 19 per cent after the age of 50, 5 per cent after the age of 55 and one chemist made his at the age of 69. Besides age, other factors may help to explain the decrease in the number of important contributions with aging; e. g. older scientists often perform their research work through their students and co-workers (p. 158). The fruits of genius are a function of numerous integers, including the personal traits of the worker, external conditions and their fortunate combination.

In another investigation (1937) Lehman[15] arrives at a similar conclusion with regard to the age at which authors have most frequently published their best books (p. 73): "Literary masterpieces of the first rank have been published most frequently by men who were not over 45 years of age."

Maximum productivity occurs at the age of 37 to 42, but it seems "highly probable that best books have been written most frequently by authors who were still in their thirties." As in the case of scientists "there are, of course, many exceptions to this latter statement, and there seems to be no fixed age limit beyond which outstanding literary work cannot be done" (e. g. the second part of "Faust" was published when Goethe was more than 80 years of age).

Rhein, Winkelman and Patten[25] put an anatomic foundation in this statement. They compared the clinical history of 100 senile patients with the pathologo-anatomic changes found in the brain after the death of these patients. They found in 11 of 100 patients only fibrotic degeneration of the brain vessels, without any pronounced changes in the brain. These patients lived to be very old, had no hemiplegias and conserved

16. Henderson, D. K., and Gillespie, R. D.: Textbook of Psychiatry, ed., 5, London. Oxford University Press, 1940, pp. 384-385.
17. Saundby, Robert: Old Age, London, E. Arnold, 1914, pp. 63-64.
18. Buzzard, Farquhar: The Pains, Penalties and Prohibitions of Old Age—Can They Be Prevented? Bull. New York Acad. Med. **4**: 1068-1077, 1928.
19. Cannon, Alexander, and Tranchell-Hayes, E. D.: The Principles and Practice of Psychiatry, London, William Heinemann, Ltd., 1932.
20. Hollingsworth, H. L.: Mental Growth and Decline, New York and London, D. Appleton & Company, 1927.
21. Lhermite, J., and Nicolas, M.: La démence sénile et ses formes anatomocliniques, Encéphale **19**: 583-594, 654-655, 1924.
22. Allbutt, T. C.: A Postgraduate Clinical Demonstration **5**: 117-123, 1894.
23. Sadler, W. S.: Theory and Practice of Psychiatry, London, 1936.
24. Tilney, F.: The Aging of Human Brain, Bull. New York Acad. Med. **4**: 1125-1143, 1928.
25. Rhein, J. H. W.; Winkelman, N. W., and Patten, C. A.: Mental Conditions in the Aged, Arch. Neurol. & Psychiat. **20**: 329-344 (Aug.) 1928.

their mental faculties to the end, although some reduction of their mental energy was recorded. They term this group as normal senility, in contrast to the other three pathologic groups in which arteriosclerosis of the brain vessels and areas of brain softening were found. In the latter groups, mental deterioration with aging was clinically recorded, resulting in extreme cases of senile dementia, arteriosclerotic psychoses or arteriosclerotic dementia (according to the nature and combination of the anatomic changes).

The psychologic tests of Miles [26] also provide an objective demonstration of this statement. He shows that sometimes in a large percentage of instances persons aged 50 to 69 or even 70 to 89 years were able to perform motor, sensory and intelligence tests equally well or better than, on the average, young persons aged 18 to 29 years or middle aged persons of 30 to 49 years, and conversely some young persons performed the same tests equally badly or worse than (on the average) the old. Miles (pp. 545-546) concludes:

> Generalization concerning the effects of age should certainly not be based on averages alone. . . . There are younger individuals whose work is poorer than the average of the older, and older individuals who exceed the younger averages in their individual performances. . . . Basically physiologic function of rate of response shows greater age decrement, while the more psychological function of mental experience holds off the negative age influence. . . . Exceptions occur largely in terms of greater or less practice and experience, and these exceptions may be the stimulus to endeavor on the part of those who wish to develop skill with age, offsetting through wisdom bases on continual intelligent exercise the necessary decrement of physical receptors and affectors.

SOME FACTORS PARTLY CAUSING OR AGGRAVATING SENILITY

In contrast to physiologic or normal old age, pathologic senility can be defined as that in which senile features appear prematurely or to an extreme degree or in which pathologic features occur which are absent in normal aging (e. g. dementia senilis).

From the practical point of view, it is unnecessary in this report to describe all the numerous and manifold factors which play a part in causing or aggravating senescence. The discussion will be limited, therefore, to two factors only—deficiency of vitamins and of hormones—since there now appears to be a reasonable hope of neutralizing the effects of these deficiencies to some extent and in certain suitable cases by corresponding measures which are already available. Before any of these measures can be recommended it is essential that their clinical trials should be performed and that in order to get quick and conclusive results they should be carried out simultaneously in several hospitals.

VITAMINS

The available literature on the role that deficiency of vitamins B and C plays in senility and some effects of this deficiency on senile patients have been discussed and our own clinical results described in a recent paper by Stephenson, Penton and myself.[27] Our clinical trial, however, was performed on patients kept on a diet low in vitamins B and C. Therefore the beneficial effects which we obtained were hardly unexpected. In addition to repetition of this clinical trial, other investigations are necessary on old people kept on a diet of which the vitamin level is sufficiently high for adult persons in order to test (1) whether the minimum and especially the favorable dose of vitamins should be higher during senility and (2) whether an extra amount of vitamin added to such a diet also relieves some senile features. The possible beneficial rule of vitamins A, D and E should also be elucidated.

HORMONES

Again, for practical reasons connected with war conditions, the effects on older persons will be discussed of deficiency of only those hormones which are already available in more or less sufficient amount on the market and which are effective by mouth. Therefore, although the varying degrees of atrophic or degenerative changes in almost every organ, including the endocrine glands, have been recorded by different investigators (i. e. Cooper [28] and Rolleston [29]), only effects of the changes in and of the hormones of the sex, thyroid and adrenal glands in old age will be examined here.

It is most probable that the atrophic or degenerative changes in these glands are not the primary causes but only the effects of senility. However, from the moment they appear in older persons they initiate pathologic conditions specific for deficiency of these glands and add them to those produced by the primary causes of senility. In this way secondary vicious circles appear which speed up the process of aging decay. Therefore, treatment of old persons with the respective hormones might reasonably be expected to produce alleviation of some of the senile changes by rupture of the secondary vicious circles.

The similarity between the symptoms of senility and some of the features of deficiency of thyroid, adrenal and sex glands, although it does not prove yet strongly suggests that at least some special senile features might be due to hypofunctions or dysfunctions of these glands.

In support of this statement is also the fact that certain mental conditions occurring in both senile and younger persons can be alleviated or even cured with the hormones of one or more of these glands. This suggests that hormone treatment might be useful in maintaining normal acuity of mental processes in older persons, especially in such periods of great strain as during a war, and indicates at least the desirability of testing this possibility by means of extensive clinical trials.

THYROID GLAND

A strong similarity between some of the features of senility and those of thyroid hypofunction can be found, especially in the picture of latent mild thyroid deficiency as described by Hertoghe [30] under the name "L'hypothyroidie benigne chronique." A full summary of this description is given here:

1. The hypothyroid patient appears older than his age, i. e. he appears to be prematurely senile.

2. This is chiefly due to the early appearance of graying of hair, which also becomes thin and falls out.

3. This is followed by baldness, which appears first in front, over the whole of the head or at the nape of the neck.

26. Miles,[5] Psychological Aspects of Aging, p. 545, table 28.

27. Stephenson, W.; Penton, C., and Korenchevsky, V.: Some Effects of Vitamins B and C on Senile Patients, Brit. M. J. **2**: 839-844, 1941.

28. Cooper, E. R. A.: The Histology of the More Important Human Endocrine Organs at Various Ages, London, Oxford University Press, 1925.

29. Rolleston, Humphry: Medical Aspects of Old Age, London, 1932, pp. 118-124.

30. Hertoghe, E.: De l'hypothyroidie benigne chronique ou myxoedeme fruste, Nouv. iconog. de la Salpêtrière **12**: 261-311, 1899.

4. The outer third of the eyebrow is usually depilated, sometimes the whole eyebrow losing a considerable amount of hair. The process is sometimes preceded by local dermatitis.

5. In more pronounced forms the skin becomes amber, and often over the cheek bones and nose are red "plaques" or red coloring.

6. Caries of the teeth and gingivitis are usually pronounced, and there is abundant deposition of tartaric salts on teeth.

7. The adenoids are enlarged and inflamed, the nasal mucous membrane thickened and in a state of congestion or chronic catarrh.

8. The voice is veiled, weak or husky, probably owing to the catarrhal condition of the vocal cords and pharynx.

9. Nervous symptoms include general apathy, fatigability, tendency to melancholy, somnolence, sometimes even hallucinations (visual or acoustic), headaches, migraines.

10. The following symptoms are very important for a diagnosis: Rheumatoid-like pains in the limbs, lumbar or sacral region, accompanied in some cases by swelling of the wrists and knees. The pains could be located either in the muscles or in the joints and bones.

11. Temperature regulation (and probably metabolism) is affected, since easy chilling is one of the most diagnostic symptoms.

12. Disorders of the female sex organs, as retroflexion of the uterus, ovarian pains, fibrous degeneration of the uterus, and fibromas were also mentioned by Hertoghe as connected with thyroid deficiency, but

13. Menorrhagia, excessive menstruation, is most typical, also occurring more frequently than normal menstruation; sometimes there is dysmenorrhea.

14. In males the testicles are often small and penis flabby, but often long.

15. The patients are short of breath, especially noticeable during muscular exercise and even while talking (making a sharp inbreathing after the end of each sentence).

16. Hertoghe considers emphysema of the lungs to be senile degeneration of these organs and thinks its early appearance in latent thyroid deficiency is a sign of premature senility.

17. Cardiovascular symptoms consist of nocturnal heart palpitations, early appearance of varicocele, and varicose veins.

18. Congestion of the liver, bile stones and therefore spontaneous pains, or a painful feeling on pressure of the bile bladder region are also typical.

19. Constipation and meteorismus, especially after meals, are also typical. They are often accompanied by gastric pains.

20. Abdominal obesity may start and sometimes develop.

21. In 1 case of latent thyroid deficiency Hertoghe mentions (p. 307) a facial psoriasis which was successfully cured by thyroid treatment.

22. Hertoghe considers that the following symptoms can be successfully, often completely, cured by thyroid treatment; headaches and rheumatoid-like pains, loss of hair, baldness, liver and biliary symptoms, somnolence, fatigability, uterine retroflexion, menorrhagia, constipation, meteorismus, gastrointestinal pains, heart palpitations, easy chilling, nasal and adenoid conditions and husky voice. General stimulation can be produced with disappearance of apathy and melancholy and a return of working capability. The progress of emphysema can also possibly be stopped. Hertoghe, however, emphasizes the great danger of using excessive doses of thyroid in the treatment. It is possible by using them to aggravate or even to produce those symptoms which can be cured by small doses.

Thus Hertoghe claimed a really remarkable improvement of the senile-like symptoms in his patients after treatment with thyroid preparations. Levy and Rothschild,[31] Parhon, Lavand and Star (all quoted by Romeis,[32] p. 1949; the original papers are unfortunately unobtainable) treated senile patients with thyroid preparations and noted the appearance of dark hair instead of white and the disappearance of dry skin, brittle nails, loss of hair, sleeplessness and mental depression. These authors, like Hertoghe, emphasize the importance of giving small doses of desiccated thyroid.

In some nonsenile patients with mental diseases atrophy or decreased function of the thyroid gland has been reported by Lewis and Davies,[33] Minski,[34] Molony,[35] Hoskins and Sleeper[36] and Hayward and Woods.[37] Gjessing[38] found that in the intervals between two katatonic periods a gradually increasing retention of nitrogen occurs. This, according to Gjessing, demonstrates a gradually increasing accumulation of toxic protein metabolic products. The maximum accumulation is reached just before the katatonic period. This accumulation probably produces katatonic excitement (mild intoxication) or katatonic stupor (produced by a great accumulation or by very toxic products). Both conditions disappear when the increased N-metabolism disappears.

Good results in different cases of mental disorder after treatment with thyroid preparations have been reported by Lewis and Davies, Minski, Molony, Hoskins and Sleeper, Hayward and Woods, Gjessing and Leeper (1900), Davidson[39] and Sawkins.[40] Ziegler[41] collected all the literature and added 3 cases of his own, showing frequent development of mental abnormalities or psychotic diseases in cases of obvious myxedema, and also improvement or even cure of these mental disturbances by treatment with thyroid preparations.

ADRENALS

Hypoplasia, atrophy or degeneration of these glands in senile human beings or animals has been described by several authors (summarized e. g. by Romeis,[32] p. 1774, and Korenchevsky[14]).

Some symptoms of adrenal hypofunction are similar to those of senility, namely general asthenia, easy fatigability, impairment of digestion and a tendency to increased pigmentation of the skin. The desirability of testing the hormones of the adrenal cortex on senile patients is suggested in particular by the closest dependence of mental and physical vigor of the organism on the cortical hormone. This hormone has been administered in mental diseases with favorable results by Lewis and Davies, Hartman, Beck and Thorn,[42] Loehner[43]

31. Levy, L., and Rothschild, H.: Corps thyroide et senilité, Paris, 1911, quoted by Romeis,[32] p. 1949.

32. Romeis, B.: Altern und Verjüngung, in Hirsch, Max: Handbuch der inneren Secretion **2**: 1745-1984, Leipzig, Curt Kabitzsch, 1931.

33. Lewis, N. D. C., and Davies, G. R.: A Correlative Study of Endocrine Imbalance and Mental Disease, J. Nerv. & Ment. Dis. **54**: 385-405, 493-512, 1921; **55**: 13-32, 1922.

34. Minski, L.: Endocrine Therapy, J. Ment. Sc. **73**: 414-418, 1927.

35. Molony, C. B.: Endocrine Therapy and the Psychoses, J. Ment. Sc. **73**: 64-80, 1927.

36. Hoskins, R. G., and Sleeper, F. H.: Endocrine Studies in Dementia Precox, Endocrinology **13**: 245-262, 1929; A Case of Hebephrenic Dementia Precox with Marked Improvement Under Thyroid Treatment, ibid. **13**: 459-466, 1929; Endocrine Therapy in the Psychoses, Am. J. M. Sc. **184**: 158-166, 1932.

37. Hayward, Emeline P., and Woods, A. H.: Mental Derangements in Hypothyroidism, J. A. M. A. **97**: 164-165 (July 18) 1931.

38. Gjessing, R.: Beitrage zur Kenntniss der Pathophysiologie der Katatonen Erregung, Arch f. Psychiat. **96**: 319-473, 1932; **104**: 355-446, 1936; **109**: 525-595, 1939.

39. Davidson, A.: A Case Illustrating the Use of Thyroid Extract in Dementia Precox, Australian M. Gaz. **30**: 200-202, 1911.

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41. Ziegler, L. H.: Psychosis Associated with Myxedema, J. Neurol. & Psychopath. **11**: 20-27, 1930.

42. Hartman, F. A.; Beck, G. M., and Thorn, G. W.: Improvement in Nervous and Mental States Under Cortin Therapy, J. Nerv. & Ment. Dis. **77**: 1-21, 1933.

43. Loehner, C. A.: The Therapeutic Effect of Adrenal Cortex Extract on the Psychotic Patient, Endocrinology **23**: 507-520, 1938; Further Observations on the Use of Adrenal Cortex Extract in the Psychotic and Nonpsychotic Patient, ibid. **27**: 378-380, 1940.

and Hoff and Shaby.[44] Neurosis, experimentally produced in sheep, was also considerably improved by administration of the adrenal cortex extract (Liddell, Anderson, Kotyuka and Hartman[45]).

MALE GONADS

Here again there is a similarity between the effects of castration or hypogonadism and some features of senility. For instance, castration in man produces in most instances the following changes (a survey of the earlier literature is given by Romeis[32] and Falta[46]):

1. Obesity in some cases only (Tandler and Gros;[47] Korenchevsky[48]).
2. Phlegmatic state of mind, apathy, depression (Miller, Hubert and Hamilton;[49] Reiss[50]).
3. Emotional instability (Miller, Hubert and Hamilton).
4. Unwillingness to do mental or physical work (Reiss).
5. Decrease in muscular activity (Simonson, Kearns and Enzer;[51] Reiss).
6. Fatigability (Miller, Hubert and Hamilton; Reiss).
7. Sleeplessness (Reiss).
8. Hot flushes (Hamilton;[52] Miller, Hubert and Hamilton).
9. Increased tendency to giddiness and sea sickness (Reiss).
10. Atrophic sex organs.

To these symptoms observed in man must be added certain changes which have been found in animals (probably also occurring in man) which are important from the point of view of functional activity of the organism, namely

11. Smaller liver, kidneys and heart (Korenchevsky;[53] Noble and Greenberg;[54] Mark and Biskind;[55] Crabtree[56]).

In the male climacteric (Mendel;[57] Hollander;[58] Marcuse;[59] Vaertig;[60] Venzmer;[61] Werner[62]) symptoms similar to those of castration appear at the average age of 48 to 52 years, the earliest age at which they have been observed being 40 (Marcuse, Vaertig). As in the woman, the symptoms in the man may be classified as:

1. Nervous and psychic, to which belong intense subjective nervousness, headaches, giddiness, scotomas, emotional instability with an inclination to tears, irritability, sudden changes of mood, decreased interest in the usual activities (even pleasures), a desire to be left alone, decrease or loss of memory and ability for mental concentration, mental fatigability, loss of or disturbed sleep, day sleeping. A typical "climacteric" neurasthenia or involutional psychosis, chiefly in the form of melancholia, with a tendency to suicide might develop.
2. Cardiovascular changes: hot flushes, fits of perspiration, chilly sensations (e. g. cold feet), tachycardia, palpitations, numbness, tingling.
3. General and other changes, including increase of body fat; physical fatigability; rougher and darker skin with wrinkles or folds appearing on the exposed parts; constipation; decreased sex potency and libido.

The changes which follow gonadectomy and some, in many cases several, changes present in men suffering from the virile climacteric or senility (already described) can be improved or some even returned to normal with testosterone esters (Henssge;[63] Laroche, Marsan, Bompard and Corcos;[64] Venzmer;[61] Villaret, Justin-Besançon and Rubens-Duval;[65] Veil and Lippross;[66] Vest and Howard;[67] Laroche and Bompard;[68] Miller, Hubert and Hamilton;[49] Foss;[69] Werner;[62] Arndt[70]).

Of particular interest are the following observations: The psychotic conditions or some mental diseases which develop in the male climacteric or in old age can also be successfully treated, in some instances even with resultant complete and lasting cure, by testosterone esters (Schmitz;[71] Weiss;[72] Guirdham;[73] Thomas and Hill[74]).

Simonson, Kearns and Enzer[51] found that testosterone esters injected or given by mouth increased the performance of muscular work by 41 to 69 per cent in eunuchoids or castrated men, while Villaret, Justin-Besançon and Rubens-Duval noticed in eunuchoids so treated a better development of muscles and larynx, a decrease of obesity and an increase of growth and body weight. Vest and Howard even observed disappearance of the wrinkled progeric condition of the skin.

44. Hoff, H., and Shaby, J. A.: Suprarenal Cortical Extract in Acute Confusional States, Lancet **1**: 27-28, 1940.
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In old or prematurely senile men treated with androgens, ergographic tests carried out by Veil and Lippross [66] and by Hamilton and Gilbert [75] showed an increase of muscular strength (up to 44 per cent, Veil and Lippross) of expiration pressure of air and of pressure under which urine was excreted (Veil and Lippross). Laroche and Bompard [68] also noticed better development of somatic muscles and increase of muscular strength and endurance.

It has been found by several workers (e. g. McGrath; [76] Ratschow and Klostermann; [77] Suzmann, Freed and Prag [78]) that ergotamine tartrate produces gangrene of the tip of the tail in rats, similar macroscopically and microscopically to angiitis obliterans which develops in old people. This experimental gangrene in rats could be prevented by injections into females of estrogenic hormones and into males of testosterone esters. Suzmann and his associates found that even in castrated males estrogenic esters had a protective action.

In old people suffering from angiitis obliterans, intermittent claudication, gangrene of the foot, ulcus cruris, angina or pseudoangina pectoris and other angiospastic disturbances of a lighter nature (e. g. cold feet and hands, numbness of the extremities), treatment of men with androgens and women with estrogens brings about alleviation or even cure of the pathologic conditions (in cases of gangrene when the disease threatens or it is just beginning to develop, but of course not when it is well advanced). These observations have been made by Baecke,[79] Sicard,[80] Champy,[81] Schittenhelm,[82] Teitge [83] and Arndt.[70] Champy and Arndt found that this angiospastic effect of sex hormones is not sex specific, e. g. both male and female sex hormones were active in males.

In castrated animals, the liver, kidneys and heart, which have decreased in size, become hypertrophied after injections of androgens, as shown by investigation of weights of the organs, their histologic structure and experiments on the isolated hearts (my co-workers and I [53]). Hypertrophy of the kidneys and (by some authors) of the liver and the heart after treatment with androgens has also been investigated and confirmed by Selye,[84] Pfeiffer, Emmel and Gardner,[85] Ludden, Krueger and Wright,[86] Noble and Greenberg,[54] Kochakian [87] and Crabtree.[56] In agreement with our experimental observations on the hypertrophying properties of male sex hormones on the heart are also the observations of Hamilton and Gilbert,[75] who found hypertrophy of the heart in human cryptorchids treated with testosterone esters. Probably a beneficial effect of the male sex hormones in senile cardiovascular cases, previously mentioned, may be explained partly in the same way. Venzmer (1938)[61] explains the effect of sex hormones by the suggestion that they probably have a dilatation effect on the arteries. Friedländer, Laskey and Gilbert,[88] observed after ovariectomy a consistent reduction of blood volume of about 25 per cent, which could be returned to normal by treatment with estrogens. Reiss [50] found in rats that after administration of sex hormones the blood content of the brain was always increased. According to Henssge,[63] high blood pressure in old people was lowered after treatment with sex hormones, but Ayman [89] did not observe this in the case of estrogens.

With regard to the duration of the beneficial effects of sex hormones on any of the senile features described in this chapter, according to all the authors it varies (e. g. Venzmer,[61] 1937): in some cases it disappears a few days after the end of the treatment, while in many other cases the improvement or disappearance of the disturbances lasts some months, a year or even two or three years. The authors also state that there are cases in which hormone treatment causes no improvement.

In general, however, the favorable effect of the hormone has been claimed in most cases as striking. Therefore these claims by numerous investigators of the problem can under no circumstances be disregarded.

COMMENT

The similarity of certain features of deficiency of the thyroid, adrenal and sex glands with those of senility and the favorable effect of the hormones on these glands on several features of senility, which many investigators have claimed, strongly suggests the desirability of testing these compounds on elderly patients in hospitals, the best possible technic being used, with the aim of ascertaining definitely their properties as harmless and desirable physiologic stimulants in old age. In the case of the sex hormones special attention must be paid to finding compounds or doses which do not stimulate the sex libido or function, an undesirable effect in old age.

The greatest defect of all the clinical trials so far performed appears to have been either the too small number of patients observed or the deficient technic, especially the inadequacy of the control experiment. In most of these trials, there was no control group of patients injected with oil only.

There is another group of natural stimulants—the vitamins—which also needs to be extensively investigated with the best and most comprehensive clinical technic.

If the trials could be organized simultaneously on a large number of patients in several hospitals (say seven to ten), at least some conclusions sufficient for the practical application of these stimulants might be expected in one or two years.

75. Hamilton, J. B., and Gilbert, J.: New Conception of Etiologic Factors in the Production of Symptoms Observed in Benign Prostatic Hypertrophy, Tr. West. Branch Soc. Am. Urol. **7:** 144-145, 1938.

76. McGrath, E. J. G.: Mental Peripheral Gangrene, Arch. Int. Med. **55:**942-957 (June) 1935.

77. Ratschow, M., and Klostermann, H. C.: Experimentelle Befunde zur Gefässwirkung der sexual Hormone und uhre, Beziehungen zur Klinik der peripheren Durchblutungsstörungen, Ztschr. f. klin. Med. **135:** 198-211, 1938.

78. Suzmann, M. M.; Freed, C. C., and Prag, J. J.: Studies on Experimental Peripheral Vascular Disease, with Special Reference to Thromboangeitis Obliterans, South African J. M. Sc. **3:** 29-39, 1938.

79. Baecke, L.: Un cas de maladie de Léo Buerger (thrombo-angéité oblitérante) traité par l'opotherapie ovarienne, Bruxelles méd. **7:** 1086, 1927, quoted by McGrath,[76] p. 956.

80. Sicard, M.: Sur la maladie de Buerger, Bull. et mém. Soc. méd. de hôp. de Paris **51:** 443, 1927, quoted by McGrath,[76] p. 596.

81. Champy, C.: Le caractère ambosexual des hormones génitales et ses conséquences, Bull. Acad. méd. Paris **113:** 915-917, 1935.

82. Schittenhelm, A.: Sexualhormonen in der inneren Medizin, München. med. Wchnschr. **84:** 315, 1937.

83. Teitge, H.: Die Behandlung der Endangiitis obliterans und des Ulcus cruris mit Sexualhormone, Med. Klin. **33:** 1153-1155, 1937.

84. Selye, Hans: The Effect of Testosterone on the Kidney, J. Urol. **42:** 637-641, 1939; Interactions Between Various Steroid Hormones, Canad. M. A. J. **42:** 113-116, 1940.

85. Pfeiffer, C. A.; Emmel, V. M., and Gardner, W. U.: Renal Hypertrophy in Mice Receiving Estrogens and Androgens, Yale J. Biol. & Med. **12:** 493-501, 1940.

86. Ludden, J. B.; Krueger, E., and Wright, I. S.: Effect of Testosterone Propionate, Estradiol Benzoate and Desoxycorticosterone Acetate on the Kidneys of Adult Rats, Endocrinology **28:** 619-623, 1941.

87. Kochakian, C. D.: The Rate of Absorption and Effects of Testosterone Propionate Pellets on Mice, Endocrinology **28:** 478-484, 1941.

88. Friedländer, M.; Laskey, N., and Gilbert, S.: Studies in Thromboangiitis Obliterans (Buerger), Endocrinology **19:** 461-465, 1935; Effect of Estrogenic Substance on Blood Volume, Endocrinology **20:** 329-332, 1936.

89. Ayman, David: The Treatment of Arteriolar Hypertension with Crystalline Ovarian Hormone (Theelin), Am. J. M. Sc. **187:** 806-810, 1934.

In the case of vitamins, especially, a decision to apply them practically might be reached without much reserve, if the doses that produce hypervitaminosis are clearly stated. If this precaution is taken only favorable results can be expected from their administration, especially when one takes into consideration the fact that war diets are not very rich in vitamins.

After two or three years of clinical trial it should also be possible to decide whether administration of androgens (preferably oral in the form of compounds or in doses which do not produce sex stimulation) could, always under medical supervision, be advised.

With regard to the practical application of thyroid and adrenal cortex preparations, because of their toxicity in certain doses, much more caution will be needed in coming to a decision, and it appears less certain whether a conclusive answer can be given after only one or two years of clinical trial.

SUMMARY

1. The process of aging of several functions and capacities, so far examined with the methods used, starts in the human organism at the age of 25 to 30, of some of them even much earlier (as also suggested by certain changes in the organs and tissues recorded by Minot, Robertson and myself).

2. From the practical point of view, this decrement with aging of some functions and capacities becomes considerable from the age of 50 and especially 60.

3. It must be emphasized, however, that the conditions of the functions and capacities in some young people can be as "old" as or "older" than their average condition at the age of 60 to 70, and, conversely, in some old people of 50 to 70 their condition can be equal to or better than the average of these features at the age of 20 to 25.

4. There are also important and irreplaceable advantages of old age: wisdom [90] has been acquired and ability has been tested and proved.

5. There is sufficient evidence to indicate that (*a*) pathologic changes occur with aging in the sex, thyroid and adrenal glands; (*b*) a similarity exists between certain senile changes and some features of deficiency of these glands and also of vitamin deficiency. At the same time (*c*) successful treatment of some senile features with hormones and vitamins has been claimed, although it must be emphasized that apparently a deficient technic was used in many investigations.

6. All these data point to the urgent necessity for clinical research in order to elucidate the favorable effect of these compounds on old people.

7. If proved, the physiologic, natural, stimulating properties of these compounds might be especially helpful to old people in lessening the effect of great strain and in increasing the working capacity in periods of such great crises as war.

8. If clinical trials of the hormones and vitamins will be simultaneously organized and performed in several hospitals on a large number of senile patients there might be a reasonable hope of obtaining some practical results, especially with vitamins, even during the period of the present war.

9. This limited and practical aspect of the problem of aging is one of the war problems, and research on this subject is one of the urgent tasks connected with the war.

90. Wisdom can be defined as natural intelligence of a high order, together with acquired manifold experience and knowledge, and sagacious insight in deliberation and judgment.

Clinical Notes, Suggestions and New Instruments

TUBE FEEDING FATALITIES

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The all too frequent occurrence of death from faulty nasal tube feeding in hospitals for the mentally ill presents a serious problem. These accidents are usually caused by the pouring of food or water into the trachea, resulting either in sudden death or in a gangrenous pneumonia which is usually fatal. Occasionally death may be caused by trauma to the larynx.

Obviously such fatalities are reprehensible, nor can they be satisfactorily explained to the relatives of the victim, since they are usually the result of carelessness or of faulty technic. The ease of performing nasal gavage serves as a cloak to the real hazards of this procedure, which is potentially far more dangerous than the dramatic convulsion of shock therapy. Hence it is disturbing to find that in many institutions tube feeding is performed by nurses and attendants whose knowledge of the anatomy of the pharynx and larynx is often limited. Even when the tube is inserted by the physician, the remainder of the procedure, including the removal of the tube, is frequently relegated to some one else. The removal of the tube is likewise potentially dangerous, because there is always in the tube some residual food or water which can escape into the trachea as the tube is withdrawn, unless it has been pinched off properly. Occasionally the patient partially regurgitates the feeding or the tube and risky efforts are made to reinsert a tube partially filled with food.

Difficulties of any nature are more apt to arise in the feeding of an uncooperative, struggling or assaultive patient who twists the head from side to side, coughs voluntarily and may learn to regurgitate the food and tube at will. It is unwise to attempt to feed such a patient until he has received adequate sedation. It is much easier and safer to administer an intravenous barbiturate to such a patient than to attempt forceful tube feeding. A resistive patient may manage to prevent the descent of the tube, which curls up in the mouth, enabling the patient to seize it between his teeth. An efficacious method of dealing with this situation is to insert a second tube through the other nostril, which usually succeeds in causing the patient to release the grip on the first tube, while the second one has been passed into the stomach.

Nasal tubes are often kept cold in a container of ice. When the latter melts, water can enter the tube, and unless it is emptied the water may escape into the trachea in the course of passing the tube. In some hospitals, lubrication is effected with a light liquid petrolatum, a procedure which when constantly repeated may introduce significant quantities of oil into the pulmonary tree.

The following rules are suggested:

1. No one but a physician should be allowed to insert and remove the tube.

2. All water should be drained from the tube before insertion.

3. A jelly lubricant should be used in preference to light oily substances.

4. Before any material is introduced into the tube funnel, one or more of the following tests should be performed to determine whether or not the tube is in the trachea. (*a*) Place the inverted funnel in a bowl of water and look for bubbles. (*b*) Listen for air coming through the funnel. (*c*) Listen for the patient's normal speaking voice.

5. In case of coughing or regurgitation, the tube should be removed at once and the patient rolled on his side.

6. If the patient succeeds in regurgitating the tube partially, no attempt should be made to reinsert it. It should be taken out and the procedure started over again.

7. In removing the tube one should do so after water has been poured through, and after the residual water has been trapped in the tube by firmly pinching off the latter. The tube should be removed quickly.

8. In feeding a violent patient the use of force should be avoided and, if necessary, an intravenous sedative given.

A SIMPLE SKELETONIZED PLASTER SPLINT FOR THE CERVICAL SPINE

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Physiologic rest for the cervical spine is the treatment of choice for fracture, fracture dislocation, arthritis, radiculitis and other orthopedic or neurologic lesions involving the anatomic structures that lie between the base of the skull and the thorax. Continuous immobilization for a prolonged period of time, as following fracture or dislocation of a cervical vertebra, is accomplished with greatest efficiency by a neatly applied plaster cast. A more difficult problem in splinting is presented by those patients who require, for use during the day, a light and effective support which may be removed at night or for physical therapy procedures. If a particular type of cervical collar is to serve the greatest field of usefulness, it must be quickly available and the cost must be within the means of the average patient. Commercially prepared braces for the cervical spine are, for the most part, unsatisfactory in that they are bulky and expensive and rarely offer effective support.

Until recently we utilized a cervical collar made by the impregnation of crinoline bandage with plain celluloid dissolved in acetone. This necessitated the making of a plaster model of the patient on which the crinoline was gradually built up layer by layer until the desired thickness was obtained. Since ten to fourteen days were required to prepare the collar and the cost to the patient was $35, its use was greatly restricted, particularly when immediate immobilization was desired.

Fig. 1.—Front view of cervical collar.

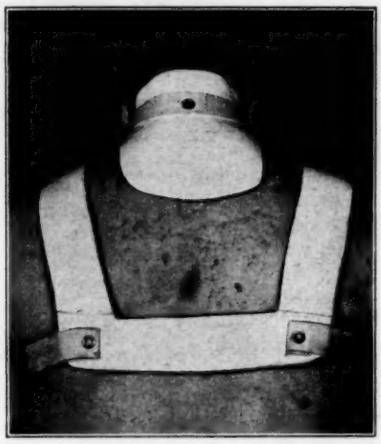

Fig. 2.—Back view. Note wide opening which permits removal of collar over the head.

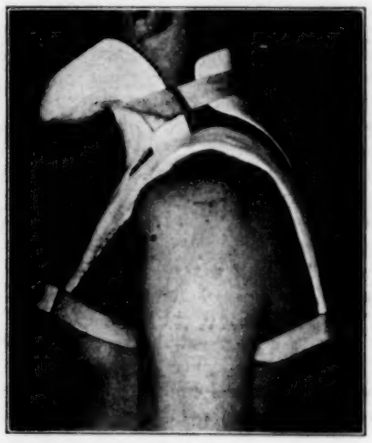

Fig. 3.—Side view of collar, showing chin support.

Within the past eighteen months we have developed and used with complete satisfaction a light weight plaster splint made of Johnson & Johnson's ready prepared 5 inch wide "specialists' splints." The dried plaster is coated with a cellulose acetate mixture, which makes the collar a rigid support of minimum weight and waterproof. As the plaster is applied directly to the skin of the patient and is molded to the contour of the neck and shoulders, an accurate fitting is assured, and this means a comfortable splint. The total cost of materials does not exceed $4, and the delay between ordering and delivering the collar to the patient need never be more than thirty hours.

BUILDING THE COLLAR

Measurements are taken of the approximate lengths of the chin support, the shoulder strips, the front and back cross pieces which connect the extremities of the shoulder strips and the two struts on each side which anchor the chin piece to the chest portion. The pieces for the chin support are made by folding over one third of the width of the "specialist splint" lengthwise so that it measures approximately 3⅓ inches instead of 5 inches wide. This also reinforces one margin, which is placed in front of the chin. All other strips are made by folding the splint lengthwise twice, so that each is three layers in thickness and one third the original width. A sufficient number of strips are folded so that the final thickness of each part of the collar will be made up of six such folded strips.

The patient is seated on a stool with an assistant holding the head in the desired position. A thin layer of petrolatum is smeared over the chin, neck and thorax to prevent the plaster from adhering to the skin and hairs. Two thicknesses of plaster for the chin support are first applied, one making sure that there are no wrinkles and that an adequate platform has been provided beneath the chin for support of the head. Two thicknesses of shoulder strips are then applied on each side and their front and back extremities are connected by cross pieces. The shoulder pieces must be placed sufficiently wide apart over the scapulas so that the collar can be readily removed over the head. Now the two oblique struts are placed on each side. The front struts extend from the top margin of the chin piece at the angles of the jaw to the anterior extremities of the shoulder strips. The posterior strips join the shoulder pieces just in front of the points at which they cross the clavicles. This pattern, while affording strength where there is stress and strain, permits ventilation on all sides, a fact much appreciated during warm weather, and at the same time reduces the weight of the collar.

After the initial outline of the dressing has been completed each strip is reinforced until the desired thickness is obtained.

While the plaster is setting on the patient, the restraining pad for the back of the neck can be made. Ten to twelve thicknesses of 5 inch splints cut to the desired length are molded to the contour of the posterior surface of the head, neck and shoulders. In some cases a strap of 1 inch webbing over a felt pad across the back of the neck is sufficient to prevent the patient from lifting his chin out of the collar.

When the plaster has become sufficiently hardened the collar is carefully removed and placed under a lamp or on a radiator for rapid drying. The margins are trimmed and sandpapered so that no rough or pointed edges are present to irritate the skin. In order to give additional strength to the collar and at the same time make it waterproof and prevent undue soiling, five coats of the following mixture are applied to the plaster:

Sufficient acetone is added to ¾ gallon of cellulose acetate to make 1 gallon of mixture; to this 6 ounces of dimethyl phthalate is added and sufficient titanium dioxide to impart a white color.

Finally, 1 inch straps and buckles are applied, as shown in the illustrations. Ordinarily soft padding is not required for the chin or shoulders if the collar conforms smoothly to the contours of the part and the head was held in a comfortable position during its building.

116 South Michigan Avenue.

CHRONIC LYMPHATIC LEUKEMIA

REPORT OF A CASE, WITH SURVIVAL FOR SIXTEEN YEARS

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Few diseases are more puzzling than the leukemias. Practically nothing is known of their etiology; no specific curative treatment is known; the prognosis is uniformly poor; even the length of survival varies within wide limits.

In chronic lymphatic leukemias the survival period averages around three years. Dowdy and Lawrence [1] found an average of 2.7 years in a series of 20 cases, with the longest five years. In a series of 87 cases, Minot and Isaacs [2] found an average survival period of two years, with the longest twenty-two years. Murphy's [3] cases averaged 3.45 years, but in 1 case there had been symptoms for twelve years, and in 3 cases chronic lymphatic leukemia had been diagnosed for more than nine years. McGavran [4] reported a case of twenty-five years' duration. Hunter [5] observed that the disease seems more benign in patients over 65 and noted an occasional nine or ten year survival.

Our patient is still alive sixteen years after his original diagnosis of chronic lymphatic leukemia.

E. R. B., a white man, was first seen Jan. 4, 1926 at the age of 68, with complaints of irregularity of the heart, moderate dyspnea on exertion and "gas on the stomach." His family and past history were not remarkable. Examination showed that he was well nourished and fairly well preserved. His heart measured 4 cm. to the right and 8 cm. to the left of the midsternal line at the apex, with normal rate, rhythm, shape and sounds. The liver and spleen were not palpable. An inguinal hernia was found, and both legs showed moderately extensive varicose veins. The teeth were extensively involved with pyorrhea alveolaris, and roentgenograms showed apical molar abscesses. Gastric analysis showed an absence of free hydrochloric acid. Roentgenograms of the stomach were negative. The blood Wassermann reaction was negative. Urinalysis was within normal limits. The blood count revealed 95 per cent hemoglobin (Sahli), 5,440,000 red cells and 73,700 white cells, with a differential count of 6 per cent polymorphonuclear leukocytes, 93 per cent lymphocytes, 1 per cent eosinophils, many degenerate lymphocytes not counted, anisocytosis, macrocytosis and microcytosis. Three days later the white blood count was 66,300 with 92 per cent lymphocytes.

While still under observation, the patient contracted an influenzal type of infection of the upper respiratory tract, and ten days later the white blood count had dropped to 30,300 with 78 per cent lymphocytes, but the count had increased to 58,100 one week later. He was instructed to use dilute hydrochloric acid with his meals and advised to have his teeth repaired. No other treatment was thought advisable.

Twelve years later (July 14, 1938) the patient was seen again, at the age of 80, with complaints of diarrhea, sore mouth and exertional dyspnea. He had been able to work around his ranch until two years previously and was still able to get around on horseback. His physical examination was identical with the last except for a salmon-red color of the oral mucosa, rales at the bases of both lungs and severe prostatic hypertrophy without nodulation. The tongue was not smooth. Lymph nodes were not palpable. Gastric fluoroscopy and roentgen examination were negative. Blood counts showed 70 per cent hemoglobin, 2,100,000 red cells, 30,600 white cells (59 per cent small lymphocytes, 23 per cent large lymphocytes, 9 per cent polymorphonuclear leukocytes, 9 per cent lymphoblasts, 2 per cent reticulocytes). The smear also showed macrocytosis, microcytosis, poikilocytosis and polychromasia. He was instructed to start taking a proprietary antianemic preparation comprising concentrated stomach tissue extract, iron and vitamin B_1 and B_2,[6] and his dilute hydrochloric acid was increased.

The patient was next seen Sept. 24, 1941 at the age of 83, with complaints of numbness of the legs, dyspnea and "gas on the stomach." He had been taking the concentrated antianemic stomach tissue product and dilute hydrochloric acid. His examination was not remarkably changed except for increased weight, increased emphysema, extensive varicosities of the legs and poor pulsation of the dorsalis pedis arteries. The liver and spleen were not palpable. There were no palpable lymph nodes. The blood count showed 90 per cent hemoglobin, 3,750,000 red cells and 28,000 white cells. The smear showed 80 per cent lymphocytes and 20 per cent leukocytes, with slight anisocytosis, macrocytosis and hyperchromasia. The hematocrit reading was 42.5. He was instructed to reduce his weight, institute Buerger's leg exercises, and continue with the dilute acid and the antianemic stomach tissue product.

COMMENT

There is a tendency to be gloomy about the prognosis in the leukemias, yet they may run a comparatively benign course. Recourse to irradiation and protoplasmic poisons is almost universal, yet in the case here described no such treatment has been given and the disease is still relatively innocuous after sixteen years.

115 East on South Temple.

From the Department of Medicine, Salt Lake Clinic.

1. Dowdy, A. H., and Lawrence, J. S.: The Treatment of Chronic Leukemia by Small Dose Roentgen Ray Technic, J. A. M. A. **116**: 2827 (June 28) 1941.
2. Minot, G. R., and Isaacs, Raphael: Lymphatic Leukemia: Age Incidence, Duration and Benefit Derived from Irradiation, Boston M. & S. J. **191**: 1 (July 3) 1924.
3. Murphy, W. P.: Results of Conservative Application of X-Ray Treatment in Chronic Leukemia, J. A. M. A. **115**: 1156 (Oct. 5) 1940.
4. McGavran, C. W.: Lymphatic Leukemia of Twenty-Five Years' Duration, Ann. Int. Med. **12**: 396 (Sept.) 1938.
5. Hunter, F. T.: Leukemias: Their Diagnosis, Prognosis and Treatment, M. Clin. North America **21**: 349 (March) 1937.
6. Kapseals Ventrex with Iron and Vitamin B (Parke, Davis & Co.) were prescribed.

Council on Pharmacy and Chemistry

REPORT OF THE COUNCIL

THE COUNCIL HAS AUTHORIZED PUBLICATION OF THE FOLLOWING REPORT.

AUSTIN E. SMITH, M.D., Acting Secretary.

DIETHYLSTILBESTROL

Diethylstilbestrol was first developed in 1937 by Dodds and his co-workers [1] and has been commercially available in Europe and Canada since 1939. It has been recently released for sale in this country by the Food and Drug Administration. This substance is a potent estrogen bearing only slight chemical relationship to the hormonal steroids. It is synthetized in the laboratory from nonbiologic chemicals. The relative inexpensiveness and certain properties of this substance offer several advantages over the natural estrogens and for this reason it has aroused considerable interest among physicians.

Diethylstilbestrol, or, as it is known chemically, 4,4′-dihydroxy-alpha, beta, diethylstilbene, or alpha, alpha′-diethyl 4,4′-stilbenediol, is a white, crystalline powder occurring in two forms which are usually separable. The trans-form has a greater estrogen potency than the cis-form. Stilbestrol is the term designating the mother substance 4,4′-hydroxy stilbene; it is much less active than the diethyl derivative.

PHYSIOLOGY

It has been adequately demonstrated that diethylstilbestrol is capable of producing practically all the physiologic effects of natural estrogens; [2] thus it will induce vaginal estrus, stimulate growth of the endometrium and myometrium, sensitize the uterus to the action of progestrone, cause rhythmic contraction of the uterus, develop the ductile tissues of the breast, change the alkaline vaginal secretion to acid and cause the appearance of glycogen in the vaginal mucosa. It is also capable of inhibit-

1. Dodds, E. C.; Lawson, W., and Noble, R. L.: Biological Effects of Synthetic Estrogenic Substance 4: 4′-Dihydroxy-α: β-Diethylstilbene, Lancet **1**: 1389 (June 18) 1938.
2. Bishop, P. M. F.; Boycott, M., and Zuckerman, S.: Estrogenic Properties of "Stilbestrol" (Diethylstilbestrol): Clinical and Experimental Investigation, Lancet **1**: 5 (Jan. 7) 1939. Noble, R. L.: Functional Impairment of the Anterior Pituitary Gland Produced by the Synthetic Estrogenic Substance 4: 4′-Dihydro-Alpha: Beta-Diethylstilbene, J. Physiol. **94**: 177, 1938. Palmer, H., and Zuckerman, S.: Further Observations on the Similarity of Stilbestrol and Natural Estrogenic Agents, Lancet **1**: 923, 1939. Dodds, Lawson and Noble.[1]

ing some of the secretions of the anterior pituitary, resulting in ovarian or testicular atrophy, cessation of growth and suppression of lactation. There are several differences between the action of diethylstilbestrol and the natural estrogens. Thus it has been demonstrated that the synthetic estrogen is unable to increase the acetylcholine content of the uterus which is obtained with the natural estrogen;[3] nor is it able to produce the ovipositor reaction in the female bitterling. In addition, it has been demonstrated that, unlike natural estrogens, diethylstilbestrol does not inhibit the action of androgens in producing comb growth of fowl. The metabolism of diethylstilbestrol is somewhat different from that of the natural estrogens in that it is not destroyed to as great an extent by the liver and thus more is excreted in the urine, from 10 to 30 per cent of injected diethylstilbestrol being excreted within a few days.[4] This estrogen is not significantly more potent than the natural estrogens in promoting the growth of tumors or malignant growths in experimental animals.

TABLE 1.—*Amount of Diethylstilbestrol Equivalent to One Estrus Unit*

	Micrograms	
Kreitmar and Seickman	0.08	Mouse
Emmens	0.1	Mouse
Sondern and Sealey	0.07	Mouse
Sondern and Sealey	1.70	Rat
Freud	0.37	Rat
Koenig and Gustavson	0.95	Rat
Dodds and others	0.35	Rat
Mazer and Israel	0.20	Rat

While it is acknowledged that diethylstilbestrol is highly potent, there is some difference of opinion as to the degree of estrogenicity which it possesses. Table 1 indicates the activity in the mouse and the rat of diethylstilbestrol as obtained by various workers.

One of the most significant properties of diethylstilbestrol is its relatively high degree of activity when administered by mouth. Originally there were claims that it was as effective by mouth as by injection. Subsequently it appears that there is considerable loss of activity when administered by mouth but apparently not as much as that with the natural estrogens. A sufficiently high percentage remains undestroyed to allow for an effective response when given orally. Table 2 indicates the relative oral and parenteral activity of diethylstilbestrol as tested in different laboratories.

This substance, as with the natural estrogens, is active by percutaneous administration in ointments and tinctures.

In the human being the physiologic responses are similar to those obtained with natural estrogens. Thus, women with infantile reproductive organs respond to diethylstilbestrol with typical feminizing changes, such as growth of the uterus and of the breasts and pigmentation of the areolas. Uterine bleeding follows the cessation of administration of sufficient amounts.

THERAPY

Since the availability of diethylstilbestrol, large numbers of reports have appeared in the scientific literature indicating that this substance is capable of complete replacement therapy in the menopausal or castrate woman.[5] Most authors report their inability to detect a significant difference in subjective relief between diethylstilbestrol and the natural estrogens in alleviating the symptoms of the menopause. Some claim that the sense of well-being following the use of natural estrogens is not obtained with diethylstilbestrol. The consensus, however, indicates that satisfactory and gratifying results can be obtained in most menopausal women with the oral dosage of 0.5 to 1.0 mg. daily. Some physicians prefer to start with small dosages and increase this until therapeutic results are obtained. Implantation of pellets of the synthetic material has been used experimentally in treating this condition.[6] In addition to relieving symptoms of the menopause, it is also capable of benefiting other conditions complicating the menopause such as senile vaginitis and kraurosis vulvae.[7] Gonorrheal vaginitis is also satisfactorily treated with the synthetic estrogen either by oral or by parenteral administration.[8] The aforementioned conditions are the only ones in which the Council on Pharmacy and Chemistry has approved the usefulness of estrogen therapy up to the present time.

In addition to these, there is considerable evidence that this estrogen in the proper dosage is beneficial in the suppression or prevention of lactation.[9] While there is no reason to believe that natural estrogens are not equally capable of producing the appropriate changes in this condition, there is little evidence of this nature in the literature, probably owing to the fact that natural estrogens are not readily available in the proper high dosage forms for this purpose. On the other hand, diethylstilbestrol can easily be administered in almost unlimited doses and has been shown to be effective in preventing the onset of lactation when administered soon after parturition. The engorgement of the breast is prevented to a great extent, and lactation fails to proceed. When diethylstilbestrol is administered after the onset of lactation, the results are not as conclusive or as dramatic. Lactation will not cease under those conditions where nursing is continued.[10] Even without the stimulus of nursing, it appears that the longer lactation has ensued the more difficult it is to suppress. The average dose of diethylstilbestrol for the suppression of lactation is 15 mg. by mouth daily for three to ten days. The Council has reviewed the available evidence and has concluded that the suppression of lactation and painful engorgement of the breast is a worthwhile therapeutic measure and has added it to the list of indications for inclusion in New and Nonofficial Remedies under Actions and Uses.

Estrogens have been used extensively in the treatment of various menstrual disorders such as amenorrhea, excessive or irregular bleeding and dysmenorrhea. The Council has to date recognized none of these conditions as indications for estrogen therapy because of the lack of satisfactory evidence as to the benefit obtained from such therapy. It is well known that in patients with amenorrhea of any type uterine bleeding usually follows the cessation of administration of large doses of estrogens. Diethylstilbestrol can be utilized readily to induce uterine

TABLE 2.—*Ratio of Activity Between Oral and Subcutaneous Administration*

Leighty and others	4:1	Mouse
Emmens	5:1	Mouse
Sondern and Sealey	5:1	Mouse
Mazer and Israel	5:1	Human
Shorr and others	1:1	Human
Dodds and others	3:1	Rat
Sondern and Sealey	2:1	Rat

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10. Abarbanel, A. R., and Goodfriend, M. J.: The Effects of Stilbestrol on Lactation, Am. J. Obst. & Gynec. **40:** 1037 (Dec.) 1940.

bleeding.[11] Following the daily administration of 5 to 10 mg. for ten to fifteen days, uterine bleeding often ensues within about ten days following cessation of therapy. For a repetition of this response another course of therapy is required. At the present time it appears that such treatment results in a possible cure of the condition in only a small percentage of cases. The induction of bleeding in the majority of these cases is not as yet considered of sufficient therapeutic significance to warrant recognition as a worthwhile procedure except in the hands of specialists.

In the treatment of excessive bleeding, results are encouraging in indicating that this substance may be of considerable value. There is some evidence that large doses of natural estrogens will suppress profuse and irregular bleeding, but this field for therapy has not been adequately explored. With the advent of synthetic estrogens, the necessary large doses for such a practice can be easily administered. Thus it has been demonstrated that the daily oral administration of 5 to 10 mg. of diethylstilbestrol will control many cases of functional bleeding for the duration of the treatment.[12] The permanence of these results is still open to question, but it is believed that the simple control of uterine hemorrhage is a worthwhile procedure, especially in those cases which in the past would require hysterectomy, ovariectomy or other medical methods. Additional evidence on this phase may be shortly forthcoming.

Other conditions which have been treated with varying success, but which may also be considered experimental, are prostatic neoplasms, hypersexuality in the male, uterine involution, abortion and Cushing's disease.

TOXICOLOGY

The question of the possible harmful effects of diethylstilbestrol has prevented the ready acceptance of the compound for therapeutic purposes in this country. The first reports on the toxicity of diethylstilbestrol in experimental animals and in man indicated the possibility that this substance produces damage to the various body organs and tissues.[13] Thus, it is recorded that administration of this material to certain experimental animals produced changes in the bone marrow, giving rise to an aplastic anemia with leukopenia and thrombocytopenia. Furthermore, signs of kidney and liver damage were obtained as well as occasional hemorrhage into the adrenals. Subsequent work has shown conclusively, however, that such changes in animals could be obtained only with relatively large doses of the estrogen and that similar changes also resulted from the use of equal amounts of natural estrogens such as estrone or estradiol.[14] Other experimental work is in agreement that amounts far in excess of the physiologic dose are harmless.[15] There is thus little evidence to indicate that the toxicity of diethylstilbestrol is significantly greater than that of the natural estrogens. One group of experimenters has claimed that the suppression of growth following diethylstilbestrol administration to rats is irreversible because of changes in the epiphysial cartilage, while natural estrogens induced a reversible stunting of growth. There is evidence, however, to indicate that the suppression of growth by diethylstilbestrol could be relieved by the administration of anterior pituitary growth hormone extracts, thus indicating the reversibility of the growth changes. The earlier work reported evidence that liver damage could result from diethylstilbestrol administration in therapeutic doses in the human being. In addition, it was claimed that this substance produced occasional psychosis, dermatologic changes and certain neurologic changes such as paresthesias and vertigo. Adequate confirmation of this work has not been reported. It has been demonstrated that therapeutic doses of diethylstilbestrol have little or no harmful effects on the liver as well as other tissues.[16] In this connection it is interesting that in experimental animals diethylstilbestrol will cause a deposition of liver glycogen, a significant reaction when it is considered that substances which damage liver produce a depletion of glycogen. In the human being, therefore, there are no data which indicate damage to blood forming elements, liver, kidney or other tissues.

Practically every investigator who has used this estrogen in man has encountered untoward symptoms. These symptoms consist chiefly of nausea, vomiting, dizziness, headache and nervousness, the most predominating complaints being those from the gastrointestinal tract. The incidence of these disagreeable symptoms varies considerably according to the different investigators. One group had reported an incidence of 80 per cent of toxic manifestations, the majority being epigastric distress. In large series of cases, however, it appears that the incidence of toxic symptoms on dosages of 0.5 to 2.0 mg. daily is 10 to 20 per cent. Most investigators agree that the incidence of untoward reactions is greater with larger therapeutic doses. There have been proposed a number of theories as to the cause of the toxic reactions. Irritation of the gastric mucosa, locally, was considered at one time the possible mechanism for the epigastric distress. This hypothesis has been dismissed because of the fact that similar symptoms result from the injection of this material as well as from the use of ointments. For this reason, therefore, the use of enteric coated tablets does not appear justified. It has been suggested that the nausea and vomiting is the result of depression of gastric acidity, which occurs to a slight extent.[17] Several women with symptoms of nausea and vomiting demonstrated on gastroscopy an edema of the gastric mucosa.[18] Such a change, of course, would in all probability account for the symptoms and would also account for a depression of gastric acidity. The mechanism of the mucosal edema is unknown at the present time, but it has been suggested that this is the result of water retention of the intestine on the basis of sodium ion retention.[18] Natural estrogens and other steroids possess the ability of inducing similar electrolytic changes. It has also been postulated that the unpleasant symptoms from diethylstilbestrol administration are the result of its rapid absorption into the body, giving rise to a condition which may be similar to that of early pregnancy, when there is likewise an elevation of the estrogen titer of the body fluids.[19] Many patients on diethylstilbestrol thereby report that they feel much the same as during pregnancy. This concept is supported by evidence that women who have been recently pregnant, and thus saturated with estrogens, rarely if ever develop untoward symptoms following large doses of diethylstilbestrol. Furthermore, diethylstilbestrol dipropionate, which is more slowly absorbed than the free compound, gives rise to a considerably lesser incidence of toxicity.[20] Unpublished work with diethylstilbestrol dipalmitate,[21] a preparation which is absorbed even more slowly, demonstrates that gastro-

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intestinal symptoms rarely developed in women who received injections of 5 mg. of the substance, while similar quantities of diethylstilbestrol induced nausea in 40 per cent of the cases. Other symptoms such as dizziness, headache and nervousness were also absent, which would lead one to suspect that these are on the same physiologic basis as the gastrointestinal symptoms.

CONCLUSION

Diethylstilbestrol, a synthetic compound, is a potent estrogen effective by mouth as well as by injection and inunction. This substance is a reliable therapeutic agent for those conditions which have been recognized by the Council as suitable for estrogen therapy, namely the symptoms of the menopause, including other conditions relating to deficiency of estrogens such as senile vaginitis, kraurosis vulvae and pruritus vulvae and gonorrheal vaginitis of children. In addition, the Council recognizes the use of diethylstilbestrol in the appropriate doses for the suppression or prevention of lactation under certain conditions. In the treatment of ovarian disturbances, diethylstilbestrol and natural estrogens have been demonstrated to be of some benefit in treating functional uterine bleeding, either menorrhagia or menometrorrhagia, but further evidence is awaited before a proper evaluation of this therapy can be made. The question of the toxicity of diethylstilbestrol is still not completely settled, but it appears most likely that this substance is not significantly more damaging to the tissues than the natural estrogens. Proof that diethylstilbestrol, in therapeutic doses, is harmful has not been presented. The development of unpleasant symptoms following diethylstilbestrol administration is apparently not the result of pathologic changes in organs, and these symptoms may be obviated to a considerable extent by the use of smaller than average doses in initiating therapy.

In view of the evidence presented in this report that diethylstilbestrol is an effective estrogen, the Council voted to accept this substance for inclusion in New and Nonofficial Remedies for a period of one year, at the end of which time a reevaluation of this substance with regard to toxicity will be made for further action.

NEW AND NONOFFICIAL REMEDIES

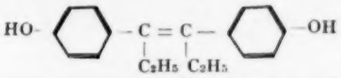
THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

AUSTIN E. SMITH, M.D., Acting Secretary.

DIETHYLSTILBESTROL

Dodds and his co-workers, after extensive experimentation with synthetic substances, recognized the estrogenic activity of the stilbene compounds. Diethylstilbestrol is the most potent of these compounds described up to the present time. It may be prepared in a variety of ways from nonbiologic, organic chemicals. Its physiologic activity duplicates practically all the known actions of natural estrogens. Thus it induces estrus in rodents, stimulates the growth of the endometrium and myometrium, primes the endometrium for progestational changes, causes reddening of the "sex skin" of monkeys and feminization of the plumage of birds, induces growth of mammary ducts in female and male animals as well as in human beings, raises the blood fat and calcium in fowl, induces uterine bleeding in castrate animals and human beings and suppresses ovulation as well as inhibits the secretion of various factors of the anterior pituitary gland, resulting in stunting of growth, inhibition of lactation and atrophy of the gonads. It differs in its action from natural estrogens in its inability to cause the ovipositor reaction of the female bitterling and to antagonize the action of androgens on comb growth of capons. The therapeutic use has been demonstrated to be effective for all those conditions recognized to respond to the natural estrogens. Various modifications of diethylstilbestrol have been devised, such as fatty acid esters and a number of ethers, for increasing the estrogenic efficiency of this substance. These are at present the subject of clinical and physiologic investigations. Diethylstilbestrol possesses the advantage of being relatively active by mouth as well as percutaneously. The ratio of potency between oral and parenteral administration varies in the hands of different investigators from 1:2 to 1:5 in the human being as well as in rodents. In the therapeutic use of diethylstilbestrol there may be a significant incidence of side reactions, the most common of these being nausea, vomiting and headache. It has been considered that these were the result of tissue damage, but no evidence has been presented that therapeutic amounts are actually harmful to human beings and there appears to be conclusive evidence that experimentally diethylstilbestrol is not significantly more toxic than the natural estrogens. It is now considered that the unpleasant symptoms arising from diethylstilbestrol administration are systemic in origin rather than local, probably because of its rapid absorption into the blood stream, since few untoward symptoms are observed with the use of diethylstilbestrol compounds, which are slowly absorbed from the site of administration.

DIETHYLSTILBESTROL.—α-α'-diethyl-4-4'-stilbenediol.—3,4-*bis*-(*p*-hydroxyphenyl)-3-hexene.—$C_{18}H_{20}O_2$(M. W. 268.34). Diethylstilbestrol has the following structural formula:



It may be prepared from anisaldehyde by (*a*) refluxing with an aqueous alcoholic solution of potassium cyanide to form anisoin, (*b*) reduction of the anisoin to desoxyanisoin, (*c*) ethylation by means of ethyl iodide and sodium ethylate to form ethyldesoxyanisoin, (*d*) treatment with ethyl magnesium bromide to form 3,4-dianisyl-3-hexanol, (*e*) dehydration to form diethylstilbestrol dimethyl ether and (*f*) demethylation by treatment with alcoholic potassium hydroxide to form diethylstilbestrol. The product thus obtained may be purified by recrystallization from dilute alcohol.

Actions and Uses.—This compound is indicated for estrogen therapy in the following conditions: menopausal symptoms, senile vaginitis, kraurosis vulvae and gonorrheal vaginitis of children. It is also of value in suppressing painful engorgement of the breasts in the puerperium and the inhibition of lactation under certain conditions.

Dosage.—The average therapeutic dose for the treatment of menopausal symptoms is 0.5 to 1.0 mg. daily by mouth, although it is advised to start with smaller doses for patients who tend to develop disagreeable symptoms. Courses of therapy with periods of a few weeks of no treatment are recommended by some authorities. Injection of similar quantities of diethylstilbestrol in oil solution are administered one or more times weekly. Ointment or suppositories containing this material may be used for topical applications in the treatment of vulvar and vaginal conditions. The contraindications to this substance are similar to those for natural estrogens, namely familial or personal history of malignancy of the reproductive organs.

Tests and Standards.—

Diethylstilbestrol occurs as a white, odorless, crystalline powder which melts at 169-171.5 C. When recrystallized from the various classes of solvents, diethylstilbestrol forms crystals containing one molecule of solvent of crystallization, which is lost with relative ease on drying at 80 C. As a consequence the commercial product, when viewed under the microscope, appears as a fine powder or as pitted crystals showing evidence of loss of solvent of crystallization. When diethylstilbestrol is recrystallized from dilute ethanol and observed under the polarizing microscope before drying, the crystals appear as highly birefringent, elongated, rectangular plates, exhibiting oblique extinction and positive biaxial character with many views showing an optic axis and occasionally the acute bisectrix. The optic angle is relatively large.

Diethylstilbestrol is readily soluble in ether, chloroform, benzene, ethanol, methanol and dilute sodium hydroxide; soluble in vegetable oils; slightly soluble in acetone and dilute ethanol; very slightly soluble in water, and insoluble in dilute mineral acids.

Dissolve approximately 10 mg. of diethylstilbestrol in 10 cc. of dilute alcohol and add three drops of 1 per cent ferric chloride solution: a yellowish green color develops which changes to yellow. Add a few drops of 50 per cent solution of antimony pentachloride in dry alcohol-free chloroform to a very dilute solution of diethylstilbestrol in the same solvent: a red colored solution is produced; more concentrated solutions give a heavy red precipitate. Dissolve 10 mg. of diethylstilbestrol in concentrated sulfuric acid: an orange color is produced, which disappears on dilution with water.

Prepare the diacetate of diethylstilbestrol by refluxing 100 mg. of diethylstilbestrol with 2 cc. of pyridine and 1 cc. of acetic anhydride for five minutes. Dilute with 20 cc. of water, filter the precipitate, wash several times with water and dry. Recrystallize the product from dilute ethanol and dry: the melting point is from 122 C. to 123.5 C. When viewed under the polarizing microscope crystals of the diacetate derivative appear as long rods, exhibiting partial parallel extinction and a positive biaxial character. The refractive indexes are $\alpha = 1.530$, $\beta = 1.560$ and $\gamma > 1.655$.

Dry an accurately weighed specimen of diethylstilbestrol to constant weight at 100 C.: the loss does not exceed 0.5 per cent. Ignite an accurately weighed specimen of diethylstilbestrol after the addition of concentrated sulfuric acid: the sulfated ash residue is not more than 0.05 per cent. Dissolve 0.1 Gm. of diethylstilbestrol in 10 cc. of warm

normal sodium hydroxide solution; dilute to 20 cc. with distilled water and add five drops of 10 per cent sodium sulfide solution: the darkening produced does not exceed that of a control to which has been added 0.02 mg. of lead.

Transfer 0.1 Gm. of diethylstilbestrol to a 100 cc. volumetric flask, add 6 cc. of 10 per cent sodium hydroxide solution and 30 cc. of distilled water; shake to dissolve the diethylstilbestrol, then dilute to the mark with distilled water. Transfer 10 cc. of the solution to a 250 cc. iodine flask, fitted with an accurately ground stopper; add 10 cc. of tenth-normal bromide-bromate solution (prepared according to the U. S. P. XI, p. 565); wash the walls of the flask and wet the stopper by the addition of 20 cc. of distilled water. Quickly add 5 cc. of 10 per cent hydrochloric acid and insert the wet stopper. Shake the mixture thoroughly for several minutes, then set aside in the dark and shake intermittently for thirty minutes. At the end of this period place 5 cc. of 10 per cent potassium iodide solution around the stopper. Remove the stopper just enough to allow the potassium iodide solution to enter the flask, shake thoroughly, rinse the stopper and sides of the flask with distilled water and titrate with fiftieth-normal sodium thiosulfate, using starch solution as the indicator near the end of the titration. Each cubic centimeter of tenth-normal bromide-bromate solution is equivalent to 2.064 mg. of diethylstilbestrol. The diethylstilbestrol content is not less than 100 per cent.[1]

COLORIMETRIC ASSAY FOR DIETHYLSTILBESTROL

The following method based on the Folin-Denis method for the detection of phenols[2] has been found reliable for the assay of diethylstilbestrol in tablets, oil solution and suppositories:

Reagents

1. Standard diethylstilbestrol solution:

Prepare a solution containing 0.1 mg of diethylstilbestrol per cubic centimeter as follows: Dissolve 50 mg. of diethylstilbestrol in 100 cc. of 95 per cent ethanol. Transfer 10 cc. of this solution to a 50 cc. volumetric flask, dilute to the mark with 50 per cent ethanol and shake well.

2. Sodium hydroxide 1 N (4 per cent).

3. Hydrochloric acid 10 per cent.

4. Saturated aqueous solution of sodium carbonate.

Dissolve 35 Gm. of anhydrous sodium carbonate in 100 cc. of warm distilled water, allow the solution to cool, seed the supersaturated solution with a crystal of sodium carbonate and allow to stand one hour before using.

5. Folin-Denis solution:

Place 350 cc. of distilled water, 50 Gm. of sodium tungstate, 12 Gm. of phosphomolybdic acid (containing 72 per cent MoO_3) and 25 cc. of 85 per cent phosphoric acid in a 500 cc. glass stoppered, round bottom flask. Boil under reflux for two hours; cool and dilute to 500 cc.

Procedure

Transfer 2 cc. of the standard diethylstilbestrol solution to a 50 cc. volumetric flask. Into a similar flask transfer a volume of the unknown solution equivalent to 0.2 mg. of diethylstilbestrol. If the unknown solution contains alkali, add sufficient dilute hydrochloric acid to render the solution very slightly acid. Add to both flasks 1 cc. of 10 per cent hydrochloric acid, 1 cc. of the Folin-Denis reagent and sufficient distilled water to make 30 cc. Shake and allow to stand for ten minutes. At the end of this period add 5 cc. of saturated sodium carbonate solution, dilute to the mark with distilled water, mix thoroughly and allow to stand for twenty minutes. At the end of this period the solutions are filtered, if necessary, and compared in a colorimeter. The comparison is facilitated by the introduction of a red filter in the light path.

NOTE.—Tannins and other phenols interfere with this reaction. The presence of most phenols and salicylic acid in the extracts can be detected by the ferric chloride test, since diethylstilbestrol gives only a pale green-yellow solution with this reagent. Tablet excipients such as starch, sugars, talc or calcium carbonate and preservatives such as chlorobutanol produced no color with this reagent.

Preparation of Extracts

(a) Diethylstilbestrol in oil.

An amount of oil equivalent to 2 mg. of diethylstilbestrol is transferred to 20 cc. of petroleum ether contained in a separatory funnel. This solution is extracted six times with small portions of 1 N sodium hydroxide; the extracts are diluted to 50 cc. with distilled water and filtered through a filter paper previously moistened with water. The first 10 cc. of the filtrate is discarded, 5 cc. (0.2 mg. diethylstilbestrol) of the remaining solution is transferred to a 50 cc. flask and assayed in the manner already described. *Note:* Certain vegetable oils contain phenolic derivatives (i. e., sesamol in sesame oil), which lead to erroneous results. Therefore it is necessary, particularly for dosage forms containing less than 2 mg. per cubic centimeter of oil, to prepare the standard by addition of an equivalent amount of the same kind of oil, free from diethylstilbestrol, to a separator containing 20 cc. of petroleum ether followed by the addition of the requisite amount of crystalline diethylstilbestrol and to follow the extraction procedure indicated for the dosage forms.

(b) Diethylstilbestrol in gelatin-glycerin suppositories.

A number of suppositories equivalent to 1 mg. of diethylstilbestrol are dissolved in 20 cc. of hot distilled water containing 4 cc. of 1 N sodium hydroxide. This solution is transferred quantitatively to a small separatory funnel by means of distilled water containing a few drops of 1 N sodium hydroxide. The contents of the funnel are neutralized with 10 per cent hydrochloric acid, and 5 cc. excess is added. The acid solution is extracted six times with ether. The combined ether extracts are dried with a small quantity of anhydrous sodium sulfate and decanted into a small distilling flask. The sodium sulfate is rinsed with several portions of ether, and this is added to the main portion of the ether extract. The ether is now distilled to dryness on the water bath, the residue is dissolved in exactly 10 cc. of ethanol, and 2 cc. of the resulting solution is transferred to a 50 cc. flask and assayed as described.

(c) Diethylstilbestrol in tablets.

In certain instances when the tablet contains only sugar and small amounts of starch as excipients, it has been found possible to dissolve the tablet directly in 0.5 N sodium hydroxide and to use an aliquot of this extract for assay. However, in the presence of large quantities of starch and in the case of enteric coated tablets where the excipient formed gelatinous precipitates, the following procedure has been found satisfactory:

A number of uncoated tablets equivalent to approximately 2 mg. are allowed to disintegrate in a separator containing approximately 30 cc. of distilled water. (The number of tablets used will depend largely on the quantity of diethylstilbestrol in the tablet. In the case of 0.1 mg. tablets the quantity of excipients introduced into the separatory funnel produces disturbing emulsions if a number equivalent to 2 mg. of diethylstilbestrol is used. Therefore, 5 or 10 tablets are generally used in this case.) In the case of enteric coated tablets the water-soluble dye is removed by rotating gently in distilled water followed by several rinsings, the calcium carbonate layer is removed by treatment with dilute hydrochloric acid and the tablets are next crushed in a test tube with a blunt end rod and the powder is transferred quantitatively to a separator containing 30 cc. of distilled water. Five cc. of 10 per cent hydrochloric acid is added and the same extraction procedure followed as described in *(b)*.

1. The nature of the reaction between bromine and diethylstilbestrol leads to complications unless the conditions of a given procedure are strictly observed. It has been found that the procedure given above tends to yield results which are somewhat higher than 100 per cent. This method of standardization must be considered tentative until more accurate analytic procedures are available.

2. Folin, Otto, and Denis, W.: J. Biol. Chem. **12**: 239, 1912.

DIODRAST COMPOUND SOLUTION.—An aqueous solution containing approximately 40.5 per cent (W/V) of the diethanolamine salt of 3,5-*di*iodo-4-pyridone-N-acetic acid and approximately 9.5 per cent (W/V) of the diethylamine salt of 3,5-*di*iodo-4-pyridone-N-acetic acid. Diodrast compound solution contains about 25 per cent (W/V) of iodine in organic combination.

Actions and Uses.—Diodrast compound solution is employed for roentgenographic visualization of the urinary tract by intravenous injection or by direct injection into the renal pelvis through a ureteral catheter. It is designed to provide a relatively large amount of iodine in a small volume of solution particularly for injection of obese subjects or for patients who cannot or will not cooperate in the preliminary preparation for excretion urography with diodrast. It is usually unnecessary to expose more than one or two films. Delayed, incomplete or absent shadows are given the same interpretation as when diodrast is employed. The same contraindications and precautions should be observed as for diodrast.

Dosage.—For excretion urography, diodrast compound solution is administered intravenously in sterile aqueous solution, the average dose for adults being 20 cc. Diodrast Compound Solution may be employed without dilution for retrograde pyelography. For economy, more dilute solutions are customarily used with satisfactory results. Eight cc. of Diodrast Compound Solution (50 per cent concentration of radiopaque material) when diluted with 12 cc. of sterile distilled water yields 20 cc. of 20 per cent concentration. Five cc. of Diodrast Compound Solution diluted with 15 cc. of sterile distilled water (final concentration 12.5 per cent) gives wholly satisfactory pyelograms; this dilution is generally employed with excellent results in thin individuals. The volume of fluid generally required for retrograde examination in adults is 20 cc.

Tests and Standards.—

Diodrast compound solution is prepared by neutralizing 3,5-*di*iodo-4-pyridone-N-acetic acid in water with appropriate quantities of diethanolamine and diethylamine. The mixture thus formed (not isolated in solid form) is soluble in water.

Diodrast compound solution occurs as a clear, pale yellow, odorless liquid, possessing a bitter taste. It is neutral to litmus and is incompatible with mineral acids and heavy metal salts. Its specific gravity is about 1.270 at 25 C.

Dilute about 0.5 cc. of diodrast compound solution to 5 cc. with water and acidify with hydrochloric acid, collect the precipitate on a filter, wash with cold water and dry at 100 C.: the 3,5-*di*iodo-4-pyridone-N-acetic acid obtained melts at 245-249 C., with decomposition (the melting point bath previously heated to 200 C.).

Dilute about 1 cc. of diodrast compound solution with 20 cc. of water; add 5 cc. of approximately 50 per cent sodium hydroxide solution and distil into about 25 cc. of normal hydrochloric acid. Evaporate the solution containing the distillate to dryness on a water bath; recrystallize the residue from alcohol by the addition of diethyl ether; dry the product under partial vacuum: the melting point of the diethylamine hydrochloride obtained is from 224 to 227 C., with sublimation.

Acidify the alkaline residue remaining in the distilling flask with dilute hydrochloric acid; remove the solution from the flask and evaporate to about one third of its volume. Cool the concentrated solution in ice water for fifteen minutes with occasional shaking, filter and concentrate the filtrate to a syrup. Treat the syrupy residue with 5 cc. of absolute alcohol, neutralize dropwise with normal sodium hydroxide, filter, wash and finally dilute the filtrate to about 8 cc. with alcohol. Add about 0.5 Gm. of picric acid (trinitrophenol) to the solution, boil, cool and place in the ice chest. Collect the precipitate on a filter, recrystallize from absolute alcohol and dry under partial vacuum: the melting point of the diethanolamine trinitrophenolate obtained is between 109 and 110 C.

Dilute 20 cc. of diodrast compound solution, accurately measured, to 200 cc. in a calibrated flask. Use portions of the diluted solution in the following determinations:

Evaporate 20 cc. of the diluted solution, accurately measured, in a tared platinum dish on a water bath and dry to constant weight at 100 C.: the weight of the residue is equivalent to not less than 48 per cent (W/V) nor more than 51 per cent (W/V) calculated to the original solution. Ash the residue in the presence of sulfuric acid: the weight of the ash obtained is equivalent to not more than 0.1 per cent.

Transfer 20 cc. of the diluted solution to an ammonia distillation apparatus, add 50 cc. of water, 5 cc. of 50 per cent sodium hydroxide and distil into 30 cc. of fiftieth-normal hydrochloric acid. Titrate the excess acid with fiftieth-normal sodium hydroxide, using methyl red as the indicator: the amount of fiftieth-normal hydrochloric acid consumed by the distilled diethanolamine is equivalent to not less than 1.4 per cent (W/V) and not more than 1.7 per cent (W/V) calculated to the original solution.

Acidify the residue remaining in the Kjeldahl flask used in the foregoing determination with sulfuric acid. Concentrate the mixture and digest with 10 cc. of sulfuric acid and 0.5 Gm. of selenium metal until clear. Cool, dilute with 100 cc. of water, transfer to the ammonia distillation apparatus and add an excess of 50 per cent sodium hydroxide. Distil into 50 cc. of tenth-normal hydrochloric acid and titrate the excess acid with tenth-normal sodium hydroxide, using methyl red as the indicator: the amount of tenth-normal hydrochloric acid consumed by the distillate is equivalent to a diethanolamine content of not less than 8.0 per cent (W/V) nor more than 8.3 per cent (W/V).

Transfer a 10 cc. portion of the diluted solution to a 50 cc. beaker, heat gently to boiling and add exactly 12 cc. of silver nitrate solution. Stir until the precipitate becomes granular, cool in ice water for thirty minutes with occasional stirring; filter through a tared gooch crucible, using the cold filtrate to wash the beaker, and wash the precipitate with 5 cc. of ice cold water; dry to constant weight at 110 C. To the weight of the precipitate (silver salt of 3,5-*di*iodo-4-pyridone-N-acetic acid) found, add 0.00135 Gm. as a solubility correction: the weight of silver 3,5-*di*iodo-4-pyridone acetate found is equivalent to a content of 3,5-*di*iodo-4-pyridone-N-acetic acid of not less than 40.25 per cent (W/V) nor more than 40.6 (W/V) calculated to the original solution.

WINTHROP CHEMICAL COMPANY, INC., NEW YORK.

Ampul Diodrast Compound Solution: 20 cc.

U. S. Patent No. 1,993,039 (March 5, 1935; expires 1952). U. S. trademark No. 312, 451.

ASCORBIC ACID (See New and Nonofficial Remedies, 1941, p. 557).

The following dosage forms have been accepted:

THE WM. S. MERRELL CO., CINCINNATI.

Tablets Ascorbic Acid: 50 mg. and 100 mg.

SMITH-DORSEY CO., LINCOLN, NEB.

Tablets Ascorbic Acid: 100 mg.

NICOTINIC ACID-U. S. P. (See New and Nonofficial Remedies, 1941, p. 555).

The following dosage form has been accepted:

THE LAKESIDE LABORATORIES, INC., MILWAUKEE.

Tablets Nicotinic Acid: 50 mg.

SOLUTION OF EPINEPHRINE HYDROCHLORIDE 1:100 (See New and Nonofficial Remedies, 1941, p. 257).

The following dosage form has been accepted:

THE LAKESIDE LABORATORIES, INC., MILWAUKEE.

Solution of Epinephrine Hydrochloride, 1:100: 5 cc. screw-capped vials. Each cubic centimeter contains epinephrine hydrochloride, 0.5 per cent chlorobutanol and 1 per cent sodium bisulfite in isotonic sodium chloride solution saturated with carbon dioxide.

EPHEDRINE SULFATE (See New and Nonofficial Remedies, 1941, p. 247).

The following dosage forms have been accepted:

GEORGE A. BREON & CO., INC., KANSAS CITY, MO.

Ephedrine Sulfate 1% Nasal Jelly with Sodium Chloride: ½ oz. collapsible tube. Ephedrine sulfate 1 per cent with sodium chloride 0.8 per cent in a water soluble boroglycerin jelly base.

ENDO PRODUCTS, INC., RICHMOND HILL, N. Y.

Solution Ephedrine Sulfate, 3%: 1 oz. bottle. Each hundred cubic centimeters contains ephedrine sulfate U. S. P. 3 Gm., chlorobutanol 0.5 Gm. and distilled water to make 100 cc.

MENADIONE (See THE JOURNAL, Jan. 17, 1942, p. 226).

The following dosage form has been accepted:

SCHIEFFELIN & CO., NEW YORK.

Tablets Menadione: 1 mg.

RIBOFLAVIN (See New and Nonofficial Remedies, 1941, p. 553).

The following dosage forms have been accepted:

INTERNATIONAL VITAMIN SALES CORPORATION, NEW YORK.

Tablets Riboflavin: 5 mg.

THE UPJOHN COMPANY, KALAMAZOO, MICH.

Tablets Riboflavin: 1 mg.

SULFANILAMIDE (See New and Nonofficial Remedies, 1941, p. 503).

The following dosage form has been accepted:

FREDERICK STEARNS & CO., DETROIT.

Tablets Sulfanilamide: 0.3 Gm. (5 grains).

THIAMINE HYDROCHLORIDE (See New and Nonofficial Remedies, 1941, p. 551).

The following dosage form has been accepted:

WHITE LABORATORIES, INC., NEWARK, N. J.

Tablets Thiamine Hydrochloride: 5 mg.

PHENOBARBITAL (See New and Nonofficial Remedies, 1941, p. 141).

The following dosage forms have been accepted:

FLINT, EATON & COMPANY, DECATUR, ILL.

Tablets Phenobarbital (White and Green): 0.016 Gm. (¼ grain), 0.032 Gm. (½ grain) and 0.1 Gm. (1½ grains).

IMMUNE GLOBULIN (HUMAN) (See New and Nonofficial Remedies, 1941, p. 421).

The following dosage form has been accepted:

SHARP & DOHME, INC., PHILADELPHIA.

Vacule Ampoule-Vials Lyovac Immune Globulin (Human): Containing amounts sufficient to yield 2 cc. and 10 cc. of restored globulin, packaged respectively with 2 cc. and 10 cc. ampuls of distilled water as a diluent, preserved with 0.35 per cent phenol. A dried form of immune globulin (human).

NIKETHAMIDE (See THE JOURNAL, March 28, 1942, p. 1052).

The following dosage form has been accepted:

LEDERLE LABORATORIES, INC., NEW YORK.

Ampul Solution Nikethamide: 1.5 cc. and 5 cc.

CALCIUM GLUCONATE (See New and Nonofficial Remedies, 1941, p. 176).

The following dosage form has been accepted:

ENDO PRODUCTS, INC., RICHMOND HILL, N. Y.

Solution Calcium Gluconate 10% W/V Stabilized with Calcium *d*-Saccharate 0.8% W/V: 10 cc. ampuls. Each ampul contains a sterile distilled water solution of calcium gluconate-U. S. P. 1.0 Gm., stabilized with calcium *d*-saccharate 0.08 Gm.

AMNIOTIN (See New and Nonofficial Remedies, 1941, p. 375).

The following additional dosage form has been accepted:

E. R. SQUIBB & SONS, NEW YORK.

Amniotin in Corn Oil: 10 cc. vials, 20,000 International Units per cc.

SOLUBLE IODOPHTHALEIN (See New and Nonofficial Remedies, 1941, p. 233).

The following dosage forms have been accepted:

MERCK & CO., INC., RAHWAY, N. J.

Iodophthalein Soluble (*Powder*): 3½ Gm., 25 Gm. and 100 Gm. bottles.

PROCAINE HYROCHLORIDE (See New and Nonofficial Remedies, 1941, p. 80).

The following dosage form has been accepted:

LAKESIDE LABORATORIES, INC., MILWAUKEE.

Procaine Hydrochloride 2%: 30 cc. and 100 cc. vials. Each cubic centimeter contains procaine hydrochloride 0.02 Gm., sodium bisulfite 0.001 Gm. and chlorobutanol 0.005 Gm. in isotonic sodium chloride solution.

SULFANILAMIDE (See New and Nonofficial Remedies, 1941, p. 503).

The following dosage form has been accepted:

SMITH-DORSEY COMPANY, LINCOLN, NEB.

Tablets Sulfanilamide: 2½ grains and 7 grains.

TETANUS TOXOID, ALUM PRECIPITATED (See New and Nonofficial Remedies, 1941, p. 470).

PARKE, DAVIS & COMPANY, DETROIT.

Tetanus Toxoid, Alum Precipitated (Refined): Marketed in packages of two 1 cc. vials (one immunization treatment) and in packages of one 10 cc. vial (five immunization treatments).

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, JUNE 20, 1942

THE ATLANTIC CITY SESSION

With 8,238 physicians registered, the Atlantic City session exceeded all expectations. Gasoline rationing on the Eastern Seaboard, it seemed, might interfere seriously with the annual session, but fortunately the interest among the medical profession was so great that physicians poured in by every possible means of conveyance. Until 1935, registration in Atlantic City had never exceeded 5,000. In that year it was 8,409, and in 1937 it was 9,764. The registration, therefore, was particularly gratifying.

The outstanding feature of the 1942 session was the attendance of visitors from Latin America, also discussed editorially in this issue. There were 140 physicians who registered from other American nations. Many of them participated in the programs of the various sections and in the general scientific meetings. They added greatly to both the interest and the glamour of the occasion.

The great convention hall in Atlantic City is obviously an attraction for any assemblage, but particularly for one like that of the American Medical Association. All the various scientific sections, the Scientific Exhibit and the Technical Exposition were housed under a single roof.

The lower floor was occupied by the Scientific Exhibit. Hundreds of exhibitors were constantly in attendance. The booths were magnificent in a blue decorative scheme. At various times some six or eight motion picture theaters were in operation, as well as special assembly halls for lectures and demonstrations on diabetes, heart disease and infantile paralysis. All these features played, in the stage vernacular, to capacity attendance. Again and again one heard the comment that the Scientific Exhibit of the American Medical Association is the greatest postgraduate training course ever assembled anywhere in the world. Our visitors from Latin America expressed their continuous amazement and gratification at the display, and many of them participated in special exhibits on tropical disease, nutritional conditions in Latin American countries and other research projects. The Technical Exposition occupied the entire first floor of the convention hall and played likewise to capacity attendance. One exhibitor said "I would have been more than gratified with an attendance of four thousand."

The House of Delegates in Atlantic City was concerned largely with problems of organization leading to improved functions of the Association, problems related to the war and medical service plans. Portions of the minutes of the House of Delegates appear in this issue of THE JOURNAL and the remainder will be published in the weeks that follow.

One of the general scientific meetings was devoted to addresses by the inter-American guests. Another was devoted to war problems and the third to problems of general clinical importance. All these were attended by thousands of visitors. The special section meetings devoted to general practice and to legal medicine also attracted great numbers; indeed, both of the general practice sections had more than a thousand participants.

The Woman's Auxiliary had innumerable fine meetings and had developed exceptional programs of interest to workers in that field. The Auxiliary now has more than twenty thousand members, with a large House of Delegates. Its activities spread into many fields. It is proving to be a factor of great importance in promoting public health and American medicine.

Throughout the week the special qualities of Atlantic City for a session of this type became more and more apparent. All the great hotels were filled to capacity, and the innumerable dining halls and banquet rooms were used to the utmost. Many medical fraternities, clubs, alumni organizations and special societies held their meetings simultaneously with the meeting of the American Medical Association. A special dinner was tendered to the Board of Trustees by the Local Committee on Arrangements, and the Atlantic County Medical Society provided a sumptuous repast for the House of Delegates, at which Mr. Paul V. McNutt was the chief speaker. The message of Mr. McNutt on that occasion appears as the leading article in this week's issue of THE JOURNAL.

In the midst of this scientific congress the note of war was an ever present overtone. Twice during the week great convoys of ships, accompanied by destroyers and blimps, passed off shore and gave visible assurance that our nation is carrying on. From time to time interceptor planes and bombers flew out over the ocean. At night the boardwalk was dimmed out, yet hundreds of visitors walked or rode in the man propelled chairs over its pleasant paths. So the ninety-third annual session of the American Medical Association passed into history, the eleventh to be held in Atlantic City, the first annual session of World War II, a triumph in its accomplishments, a tribute to the indomitable spirit of American medicine.

THE PRESIDENT-ELECT, JAMES E. PAULLIN

The election of Dr. James E. Paullin, Atlanta, Ga., to the presidency of the American Medical Association by the House of Delegates at the annual session in Atlantic City is recognition of another son of the South whose career in the field of internal medicine and in the field of medical citizenship merits this high distinction. Dr. Paullin was born in Fort Gaines, Ga., Nov. 3, 1881. After graduation from Mercer University with the degree of bachelor of arts in 1900 he continued as a graduate student throughout 1901 and then entered Johns Hopkins University School of Medicine, from which he received the degree of doctor of medicine in 1905. He turned then briefly to pathology, acting as resident pathologist of the Rhode Island Hospital in Providence from 1905 to 1906, as resident in the Piedmont Hospital in 1906 and 1907, as pathologist to the Georgia State Board of Health from 1907 to 1911 and at the same time as associate professor of pathology of the Atlanta College of Physicians and Surgeons. In 1909 he first turned his attention to internal medicine, becoming associate visiting physician to Grady Hospital from 1909 to 1913. Then he was made visiting physician and chief of the Emory University Division, Grady Hospital. Two years later he became professor of clinical medicine at Emory University School of Medicine.

JAMES E. PAULLIN, M.D.
PRESIDENT-ELECT OF THE AMERICAN MEDICAL ASSOCIATION

With the outbreak of World War I, Dr. Paullin became major in the Medical Corps of the United States Army and served as chief of the medical service in Camp Shelby, Miss. In the field of medical organization he has come through all the ranks of organized medicine, as president of his county medical society in 1913, later of the Medical Association of Georgia, also chairman of the Section on Practice of Medicine of the American Medical Association in 1928, member of the Council on Scientific Assembly since 1933 and chairman since 1937. In the House of Delegates, where he has represented the Section on Practice of Medicine, he has been a member of many important reference committees and more recently a member of the Committee on Medical Preparedness of the American Medical Association. He became a fellow of the American College of Physicians in 1928 and has served at various times as regent and chairman of various committees, coming to be president-elect for 1941-42 and president for 1942-43. With the beginning of preparations for World War II he was called early to the work of the Division of Medical Sciences of the National Research Council and gave largely of his time to the classification of specialists in the field of internal medicine throughout the nation and as a member of the Committee on Medicine of the Division of Medical Sciences of the National Research Council.

His scientific contributions have included many papers published in leading periodicals. In other scientific organizations he served as president of the American Clinical and Climatological Society in 1937 and also as chairman of the Medical Section of the Southern Medical Association. His distinction has been recognized by election to Alpha Omega Alpha and he has been guest professor of medicine at Peter Bent Brigham Hospital and at the Pratt Diagnostic Clinic of Tufts College Medical School in Boston. Early in 1942 he went to Cuba to aid in the organization of the Finlay Institute of the Americas for the securing of interchange of scientific medicine with the Latin American countries. He was decorated by President Batista with the Order of Carlos Finlay.

Thus at the inception of his term as President-Elect of the American Medical Association Dr. Paullin is especially well fitted to continue the inter-American scientific development that was well initiated at the annual session which has just ended. The intimate knowledge of the development of medical personnel for our army which he acquired in serving as a member of the Board of the Procurement and Assignment Service for Physicians, Dentists and Veterinarians is an important attribute for the leadership of American medicine in these times.

LUDVIG HEKTOEN RECEIVES DISTINGUISHED SERVICE MEDAL

The award of the Distinguished Service Medal of the American Medical Association for 1942 was made to Dr. Ludvig Hektoen, who on July 2, 1942 will celebrate his seventy-ninth birthday. His career as a medical scientist has won him the admiration and the love of every one who knows him. The young men whom he has encouraged and stimulated are many in number.

The medical career of Ludvig Hektoen began with a job as druggist in a hospital, which became for him an inspiration to the study of medicine. He graduated in 1887 from the College of Physicians and Surgeons in Chicago, then served as apothecary in the Illinois Eastern Hospital for the Insane and subsequently made first place in the examination for internship at the Cook County Hospital. In this capacity he came under the direct instruction of Christian Fenger and turned naturally to pathology for a career. He was made curator of the museum of Rush Medical College in 1889 and in 1891 became professor of general pathology in his alma mater. In 1892 he became professor of pathologic anatomy and in 1894 professor of morbid anatomy and director of the laboratory of normal and pathologic histology, bacteriology and hygiene in Rush Medical College. From that time onward his career has been a series of new appointments and new obligations in every field of medical science and public work.

LUDVIG HEKTOEN, M.D.
AWARDED DISTINGUISHED SERVICE MEDAL

Dr. Hektoen has been pathologist to the Presbyterian Hospital and head of the department in the University of Chicago and of pathology of St. Luke's Hospital. He established in 1902 the John McCormick Institute for Infectious Diseases and became its director. In 1932 he was made a member of the National Advisory Health Council of the U. S. Public Health Service and later became chairman of the Advisory Committee of the National Cancer Institute. In April 1915 he became chairman of the Committee on Scientific Research of the American Medical Association, in which position he has been instrumental in determining grants of funds for research carried on throughout the country. In 1916 Dr. Hektoen gave the Cutter Lecture of the Harvard University Medical School and received the honorary degree of Doctor of Science from the University of Wisconsin. He was president of the American Society for Experimental Pathology. He received in 1920 the honorary degree of Doctor of Laws from the University of Cincinnati. In 1924 he was chairman of the Division of Medical Sciences of the National Research Council and in the same year he was appointed consultant pathologist in the U. S. Public Health Service. In 1926 he served again as chairman of the Division of Medical Sciences of the National Research Council. The Norwegian government gave him its most distinguished recognition, the Order of St. Olaf, in 1929.

Throughout much of his life Dr. Hektoen has been engaged in special work in the field of cancer, serving for many years as a member of the board of directors of the American Society for the Control of Cancer and also as a member of the board of directors and of the advisory board of the Chicago Tumor Institute. In his career, however, he has been interested in every phase of medical science. Essays on pathology have been interspersed with scientific research on bacteriology, parasitology, immunology and cancer. He has maintained a personal and intense interest in medical history and in all problems of social organization which involve medical knowledge. The bibliography of his writings includes many hundreds of references but fails to include innumerable reviews, official documents and miscellaneous writings that give a true picture of the contribution that he has made. He has been editor of the *Journal of Infectious Diseases* since it was first established in 1904 and also editor of the *Archives of Pathology* since its first number in 1925. He has also been at various times editor of the *Proceedings of the Institute of Medicine of Chicago*, chairman of its board of governors and editor of the *Transactions of the Chicago Pathological Society*. A special issue of

the *Archives of Pathology*, dedicated to him at the time of his seventy-fifth birthday, carried the names of more than a hundred physicians who have at one time or another come directly under his preceptorship or inspirational leadership.

Last year, as a native of Wisconsin, Dr. Hektoen was awarded the Distinguished Service Award of the State Medical Society of Wisconsin. The Distinguished Service Medal of the American Medical Association, the greatest token of distinction in science offered by the American Medical Association, comes to him as a recognition by this great body of the tremendous contribution that he has made. When he was notified of this honor, Dr. and Mrs. Hektoen came at once to the place of the annual session in Atlantic City; the medal was conferred on him at the opening general meeting by Dr. Fred Rankin, President of the Association.

Current Comment

INTER-AMERICAN GUESTS IN ATLANTIC CITY

A significant feature of the 1942 annual session of the American Medical Association was the attendance of our guests from other American nations. Hawaii, the Philippines and Puerto Rico were represented as constituent parts of the American Medical Association. Indeed, the representative from the Philippines, Dr. Benvenuto R. Dino, had escaped from Corregidor to Mindanao with President Manuel Quezon in a submarine and had flown from Mindanao to Australia and then reached the United States with President Quezon aboard the *President Coolidge*. From other parts of the world came 140 representatives, including 56 from Canada, 13 from Brazil, 11 from Cuba, 10 from Colombia, 9 from Argentina, 7 from Mexico, 7 from Chile, 5 from Venezuela and smaller numbers from Costa Rica, Peru, San Salvador, Haiti, Uruguay, Bolivia and Paraguay. Guests were also in attendance from South Africa, Persia, China, Greece and British Guiana. Following is a list of the inter-American representatives who appeared on the scientific programs:

SOUTH AMERICA

R. David de Sanson, Rio de Janeiro, Brazil, Section on Laryngology, Otology and Rhinology.

Luthero Vargas, Rio de Janeiro, Section on Orthopedic Surgery.

Moacyr E. Alvaro, São Paulo, Brazil, Section on Ophthalmology.

Alejandro Lipschutz, Santiago de Chile, Section on Obstetrics and Gynecology.

Jorge E. Cavelier, Bogota, Colombia, Section on Urology.

Alberto Hurtado, Lima, Peru, General Scientific Meetings and Section on Pathology and Physiology.

MEXICO

Ignacio Chavez, Mexico, D. F., General Scientific Meetings and Section on Experimental Medicine and Therapeutics.

Francisco de P. Miranda, Mexico, D. F., Section on Practice of Medicine.

CUBA

Raimundo de Castro, Havana, Section on Miscellaneous Topics, Session on Legal Medicine.

V. Pardo Castello, Havana, Section on Dermatology and Syphilology.

Enrique Saladrigas Zayas, Havana, General Scientific Meetings.

PUERTO RICO

Enrique Koppisch, San Juan, General Scientific Meetings.

CANADA

Wesley Bourne, Westmount, Que., Section on Anesthesiology.

John F. McIntosh, Montreal, Que., General Scientific Meetings.

George E. Hall, Ottawa, Ont., General Scientific Meetings.

D. Y. Solandt, Toronto, Ont., joint meeting of Section on Nervous and Mental Diseases and Section on Orthopedic Surgery.

D. E. Staunton Wishart, Toronto, Ont., Section on Laryngology, Otology and Rhinology.

Joseph A. MacFarlane, Toronto, Ont., Section on Orthopedic Surgery.

In subsequent issues of THE JOURNAL will appear many of these contributions and also some portraits and group pictures. On June 10 the Board of Trustees and officers of the Association tendered a reception to all our inter-American visitors, which was a most pleasant occasion, serving to cement more fully the bonds of friendship initiated by this annual session. Speaking as a representative of the inter-American group, one of their leaders urged that all future sessions of the American Medical Association feature the attendance of guests from inter-American countries. He felt that times of peace would raise the number from 140 physicians who registered on this occasion to thousands. THE JOURNAL here tenders to our inter-American guests the sincere appreciation of the American Medical Association for their cooperation at this time, when transportation made their attendance especially difficult. Their contribution to the scientific programs, to many of the special meetings and occasions, and their congeniality were inspiring.

FOURTH OF JULY FIREWORKS INJURIES

From 1937 to 1941 inclusive the American Medical Association conducted annual summaries of injuries resulting from the celebration of the Fourth of July with fireworks. The information summarized was obtained from questionnaires addressed to hospitals throughout the country. The total number of injuries recorded in 1937 was 7,205 and in 1941 2,039, a significant reduction. The number of deaths decreased from 20 in 1937 to 11 in 1941. Throughout this period THE JOURNAL has stressed the fact that adequate control of this unnecessary source of death and injury is dependent not only on adequate state legislation but on enforcement of existing laws as well. This year a survey by the American Medical Association is not planned, but in the light of past experience it must be emphasized that neither legislative effort nor the work of enforcement agencies can be relaxed if a new rise in injuries and deaths is to be prevented. Again THE JOURNAL cautions against any misguided sense of patriotism which might result in the increased use of fireworks on Independence Day 1942.

APPEALS COURT CONFIRMS DECISION OF DISTRICT OF COLUMBIA COURT

Announcement was made on June 15 that the United States Court of Appeals for the District of Columbia had affirmed the judgment of the lower court convicting the American Medical Association and the District of Columbia Medical Society. In accordance with the instructions of the House of Delegates and the Board of Trustees, attorneys of the American Medical Association propose, in effect, to appeal to the Supreme Court of the United States from the judgment of conviction.

NEW OTORHINOLARYNGOLOGIC ABSTRACT JOURNAL

Under the chief editorship of Chevalier L. Jackson, the first issue of the *Quarterly Review of Otorhinolaryngology,* dated March 1942, has appeared. This abstract journal reproduces some illustrations, and the abstracts are arranged in systematic fashion under the main headings of Otology, Rhinology and Laryngology. Sections on Bronchology and Esophagology are to be included later. These main heads are further subdivided, and, at the end, in a section called General, articles covering more than one of the subdivisions are abstracted. The *Review* aims to cover not only the important journals published in the United States and Canada but also a carefully selected list of the leading publications of the Latin American countries.

ANOTHER DIRECTORY SCHEME

Ingenuity leads to many an extraordinary plan for the making of money. To the secretary of a state medical board came a communication from the Dixie Letter Shop at Roanoke, Va., stating that the "shop" is preparing a mailing list of all physicians in the entire United States for the use of the United States government in addressing each of them, and requesting the secretary to mail at once a copy of the state roster of registered physicians, giving their names and addresses. Haste is urged; they want to commence addressing the government envelops promptly on receipt of material from them. A postscript stated that the "shop" is endeavoring to secure an up to date list for use by the government, because the American Medical Directory, which came off the press in July 1940, is inadequate to meet the present emergency. Apparently the promoters never heard of the Directory Service, which continually brings up to date the latest edition of the American Medical Directory. Furthermore, they do not seem to be aware of the fact that the Directory is issued regularly and that this year's edition is in press. Furthermore, the National Roster of Scientific and Specialized Personnel has at present the latest addresses of all physicians in the United States, as a result of questionnaires which were recently mailed to all physicians by the government. What government agency requested this particular "shop" to prepare such a list? Since conservation of effort and materials is essential to defense, why need any one set up machinery for developing a new directory? State boards of licensure are hardly likely—at their own expense—to supply the Dixie Letter Shop with the lists requested. They ought to inquire "How come?" But perhaps the Dixie Letter Shop is just working on the old aphorism "It never hurts to ask, somebody might say 'Yes.'"

A CONTINUOUS HEALTH PROGRAM

Two fundamental difficulties—insecurity of tenure for competent health officers and political interference in public health work—constantly threaten health programs in many American communities. Racine, Wis., an industrial lake shore city of approximately seventy thousand population, has had its industrial ups and downs during the past twenty years, but throughout that time it has maintained an increasingly effective public health service. Its 1941 annual report [1] is a mimeographed statement with a printed cover, as distinguished from expensively printed reports featured elsewhere. Racine has had only two health officers in twenty years; the first resigned voluntarily to enter a larger field, and the second is serving his third consecutive term. There has been virtually no turnover in the personnel of the department, except as the result of voluntary resignation and deaths in service. Such continuity without political interference under four mayors makes for consistency of policy and for steady uninterrupted progress. Since 1927 the facilities and records of the city and its health work have been presented by the health officer in an effort to learn about shortcomings and to plan a program to meet demonstrated needs. During this time the city has been listed first in its class once and received honorable mention three times in the Interchamber Health Conservation Contest of the United States Chamber of Commerce in cooperation with the American Public Health Association. The latest citation was for 1941. In the Racine health program a high degree of cooperation has been developed between the medical profession and the public health department. Physicians have participated actively in immunization programs, large health programs and antepartum service. The medical society has steadily and consistently supported the health officer in his aims and has on occasion served him with constructive criticism. Racine has been rated by the American Public Health Association as one of three cities in the United States with the highest percentage of possible cases of measles and whooping cough reported. Eighty-five per cent of the expectant mothers of the community have been shown by surveys year after year to be under medical care by their own physicians not later than the sixth month of pregnancy. There is no antepartum clinic. Only four births in 1941 were attended by midwives and only thirty-nine did not occur in hospitals. The total number of births for 1941 was one thousand two hundred and sixty-three. The infant death rate was 27.5 per thousand living births. This report offers an indication of what can be done in a community which is not exceptionally privileged but which has put into its public health work the three essential ingredients of medical cooperation, security of tenure for competent personnel and minimum of political interference.

1. City of Racine, Department of Health, Annual Report, 1941, Racine, Wis.

MEDICINE AND THE WAR

In this section of The Journal each week will appear official notices by the Committee on Medical Preparedness of the American Medical Association, announcements by the Surgeon Generals of the Army, Navy and Public Health Service, and other governmental agencies dealing with medicine and the war, and such other information and announcements as will be useful to the medical profession.

THE NAVY NEEDS PHYSICIANS

Qualified physicians may still apply for appointment in the United States Naval Reserve. Rear Admiral Ross T. McIntire states that the Navy needs many more physicians, especially the younger men. The physician has free choice at the present time of applying for service in either the Navy or the Army. If he desires to apply for service in the Navy, he should communicate with the director of Naval Officer Procurement in his naval district. The Bureau of Medicine and Surgery will be pleased to advise any physician of the address of his director of Naval Officer Procurement if the address cannot be obtained otherwise.

STUDENTS MAY ENLIST AS ENSIGNS IN THE NAVAL RESERVE

The Navy has not completed its quota of ensigns, H-V (P), U. S. Naval Reserve (medical students and premedical students accepted for admission to the next convening class in medical colleges). The recruitment program for appointments in class H-V(P), U. S. N. R., will be continued. Senior medical officers in various offices of Naval Officer Procurement will be pleased to cooperate with the deans of medical schools in aiding students to apply for appointment in this classification.

TREATMENT OF LEWISITE BURNS OF THE EYE

Carefully controlled work conducted by the National Research Council indicates that the most effective treatment for lewisite burns of the eye is washing with large amounts of 2 per cent solution of sodium bicarbonate in water or with plain water, which should be carried out as soon as possible after exposure. This information from the Office of Civilian Defense, Washington, D. C., is made available especially because a previous news release dated March 31 referred to the treatment of lewisite burns of the eye with hydrogen peroxide, which has been found to be ineffective.

SPECIAL TRAINING FOR MEDICAL OFFICERS

Fifty-two officers of the medical department of the U. S. Army graduated at the Medical Field Service School, Carlisle Barracks, Pa., June 6, after a special one month of training for particular assignments in the medical battalions of new infantry divisions to which all of these officers have been assigned. In a short ceremony, Brig.-Gen. Addison D. Davis, commanding general at Carlisle Barracks, awarded the diplomas. Three members of the class belong to the Medical Administrative Corps and forty-nine to the Medical Corps. The members of this class came from twenty-five states and the District of Columbia. A succeeding class of fifty-six members arrived at Carlisle Barracks June 13 to begin the special training.

COURSES IN THE TREATMENT OF BURNS

The Committee on Postgraduate Education of the Medical Society of the District of Columbia during May sponsored a postgraduate course in the modern treatment of burns and the prevention and treatment of chemical casualties, to which all physicians in the District and nearby Maryland and Virginia were invited, and for which there was no charge. The first lecture, on May 18, was by Comdr. E. Harvey Cushing, M. C., U. S. N. R., and formerly of the faculty of medicine at Western Reserve University and special observer in England for the U. S. Navy. The second lecture, May 25, was by Dr. Leon Goldman, assistant professor of dermatology, University of Cincinnati College of Medicine, and consultant in chemical warfare in the Office of Civilian Defense.

COURSES IN CHEMICAL WARFARE IN LOS ANGELES

The Office of Civilian Defense in Washington, D. C., sent instructors and necessary equipment to Los Angeles to present a three day intensive course on medical aspects of chemical warfare, beginning June 5. The first day's instruction was given in the Auditorium of the Los Angeles County General Hospital and the following two days' instruction at the Los Angeles County Medical Building, 1925 Wilshire Boulevard. On account of limited space, the attendance on the first day was limited to seventy-five physicians and on the last two days to two hundred physicians. The instruction was under the direction of Dr. W. L. Mould of the Office of Civilian Defense in Washington, D. C. The course was offered to physicians in the southern California area who were willing to teach the subject in their own communities.

VOLUNTEERS ENROLLED FOR CIVILIAN DEFENSE

At the first conference on May 29 with assistant regional directors in Washington since the organization of the Citizens Service Corps, Jonathan Daniels, assistant director of the Office of Civilian Defense in charge of civilian mobilization, reported that more than nine million volunteers are now enrolled for civilian defense work, including both the protective services and community activity. About nine thousand five hundred local defense councils are now organized, which is an increase of more than five hundred since March 1, and the number of volunteer offices, some of which serve as many as five local defense councils, has risen since March 1 from 1,950 to 2,403. Mr. Daniels said that our people recognize the urgency of mustering all our forces for a maximum civilian effort in war and they are asking "How can I help?" The machinery of organization necessary to transmit and apply this human energy where it is most needed, he said, is ready and moving.

BLOOD PLASMA RESERVES

The Illinois State Department of Health, according to the Chicago *Sun*, is establishing statewide registry of blood types in connection with its collection of blood plasma for possible disaster victims. The plasma has been collected in downstate areas by a mobile unit and shipped to Chicago for processing.

The Racine County (Wis.) Medical Society is active in the formation of a blood bank in Racine for which $2,000 for equipment was recently donated by various citizens. Two Racine hospitals will serve as collecting stations.

The State Board of Health of Florida sent a trailer to Palatka, May 13-14, to collect human blood for processing. According to the Jacksonville *Times-Union*, the state board sends the blood to a central laboratory for processing and then returns the plasma to the counties in which it was gathered. In this way hospitals will have plasma on hand while awaiting the completion of the central blood bank at Orlando.

Equipment has been obtained for a blood bank to be operated in St. Elizabeth's Hospital, Yakima, Wash., which will be able to provide sufficient plasma for use in the Yakima Valley.

CIVILIAN DEFENSE EQUIPMENT

One thousand six hundred first aid belts with supplies to fill them provided from state funds have been received by the civilian defense organization at New Bedford, Mass. Ambulance equipment has been received, also $2,000 worth of medical supplies paid for by the New Bedford Defense and Health Corps, Inc. One thousand persons have enrolled to serve at fifteen medical assembly points; two hundred stretchers are available and more are being manufactured and paid for by the city. The medical division has a complete list of all medical supplies in the local drug stores, and the defense committee has received promise of delivery of supplies for twenty-two medical teams and eleven casualty stations. These preparations are distinct from the Red Cross preparations, which have provided well for disaster relief.

The Indiana Funeral Directors' Association, according to the Indianapolis *News*, in case of emergency can supply eight hundred and seventy ambulances and two thousand, five hundred and fifty-seven men to the proper authorities. In addition, two hundred and fifty-five additional cars can be made available by the association, twenty-four inhalators, six hundred and twenty-five stretchers and three hundred and seventy-five flares and flags. This equipment has already been listed with the defense council and with the director of the Indiana Department of Public Safety. Three hundred and eighty of these ambulances are already equipped for first aid.

San Antonio, Texas, has set up emergency first aid hospitalization stations with eight hundred and seventy-four beds, and six hundred and fifty additional beds have been installed in the local regular hospitals.

Four hundred stretchers were made in WPA shops in San Diego, Calif., and delivered on May 10 to the Emergency Medical Service of the Office of Civilian Defense. Members of the National Youth Administration helped in cutting the lumber, women of the WPA shaped and stitched the canvas, while men in furniture repair shops finished the stretchers by assembling and painting the frames and attaching the covers.

CORPS AREA SURGEONS CONFER WITH SURGEON GENERAL

U. S. army corps area surgeons and the surgeons of the four field armies have just concluded in Washington a four day conference with Major Gen. James C. Magee, Surgeon General of the Army, the War Department announced on May 28. The army surgeons discussed administrative problems and uniformity of procedure. The following Medical Corps officers attended the conference:

First Army: Col. Raymond W. Bliss, Fort Jay, N. Y.
Second Army: Col. Frank H. Dixon, Memphis, Tenn.
Third Army: Col. John Dibble, San Antonio, Texas.
Fourth Army: Col. Condon C. McCornack, San Francisco.
First Corps Area, Boston: Col. J. J. Reddy.
Second Corps Area, Governors Island, N. Y.: Col. Charles M. Walson.
Third Corps Area, Baltimore: Col. Robert C. McDonald.
Fourth Corps Area, Atlanta, Ga.: Col. Sanford W. French.
Fifth Corps Area, Fort Hayes, Ohio: Col. Edgar C. Jones.
Sixth Corps Area, Chicago: Col. Joseph E. Bastion.
Seventh Corps Area, Omaha: Col. Herbert C. Gibner.
Eighth Corps Area, Fort Sam Houston, Texas: Col. W. Lee Hart.
Ninth Corps Area, Fort Douglas, Utah: Col. Harry R. Beery.

VENEREAL DISEASE CONTROL OFFICERS

The U. S. Army has appointed the following venereal disease control officers in areas designated in its effort to forward a comprehensive program to reduce loss of army strength through venereal diseases:

Capt. Lyman C. Duryea, New York, to headquarters second corps area, Governors Island, New York.

Capt. Albert F. Doyle, Johnstown, Pa., to headquarters third corps area, Baltimore.

Major William A. Brumfield Jr., Albany, N. Y., to headquarters Fourth corps area, Atlanta, Ga.

Capt. Ernest B. Howard, Boston, to headquarters seventh corps area, Omaha.

Capt. Wayne W. C. Sims, Seattle, to headquarters ninth corps area, Fort Douglas, Utah.

HOSPITAL UNIT PRACTICES MOBILIZATION

Everett, Wash., has two mobile defense hospital units, each complete with a twenty-five bed hospital and a surgery which can be moved about and set up quickly. To each surgery is assigned two surgeons, six nurses and two anesthetists, while the hospital portion of the unit has two nurses, eight nurses' aides and several first aid workers. With each hospital unit are two emergency ambulance units, to each of which are assigned five women trained in first aid, and a driver. One of Everett's mobile defense hospital units held a practice mobilization May 10.

ORDNANCE INDUSTRIAL HYGIENE SURVEYS

A number of additional war plants have just been certified for industrial hygiene survey by the Office of the Chief of Ordnance, War Department, making a total of one hundred and forty-three establishments turned over to the Division of Industrial Hygiene, National Institute of Health, to date.

Three crews are continuing the ordnance survey work of the division.

Passed Assistant Sanitary Engineer (R) H. E. Seifert has been assigned to the Office of the Chief of Ordnance for the purpose of effecting a closer liaison between the Ordnance Department and the Division of Industrial Hygiene, National Institute of Health, in their cooperative program of inspection of government owned plants.

AVIATION MEDICAL EXAMINERS

A routine course of instruction to qualify medical officers for duty as aviation medical examiners began at the School of Aviation Medicine, Randolph Field, Texas, on May 18 and will continue until August 15. Following is a list of the officers enrolled:

Atkinson, Robert H., 1st Lieut.
Axelrod, Bernard, 1st Lieut.
Bigler, Ivan E., 1st Lieut.
Boothby, Carl F., 1st Lieut.
Borkon, Maurice, 1st Lieut.
Boyd, Eugene J., 1st Lieut.
Bruno, Nicholas J., Captain.
Burchell, Howard B., 1st Lieut.
Cadranel, Joseph L., 1st Lieut.
Capriotti, Octavius A., 1st Lieut.
Chechile, Dominic T., 1st Lieut.
Chinn, Silas, 1st Lieut.
Clark, Benjamin P., Captain.
Cleland, Charles E., Jr., Major.
Cross, Merrill M., Captain.
Decker, Charles E., 1st Lieut.
De Fries, William A., 1st Lieut.
Dickerman, Frederick A., 1st Lieut.
Dickerman, Henry S., Jr., 1st Lieut.
Donich, George M., Captain.
Doughtie, Jack L., Captain.
Downing, John S., 1st Lieut.
Dutlinger, Robert P., 1st Lieut.
Ellis, Fred A., 1st Lieut.
Espinoza, David V., 1st Lieut.
Essrig, Irving M., Captain.
Ettman, Irving K., 1st Lieut.
Fogel, David H., 1st Lieut.
Franzoni, Andrew E., Captain.
Friedman, Harold S., 1st Lieut.
Gallagher, Edward J., 1st Lieut.
Gans, Paul J., Captain.
Giardina, Jacob J., Captain.
Glasscock, James R., Captain.
Green, Daniel M., Captain.
Green, George B., Captain.
Greenwood, Robert C., 1st Lieut.
Groth, Norton R., Captain.
Halford, Richard F., 1st Lieut.
Hammerel, John J., 1st Lieut.
Hanson, Martin F., Captain.
Harms, Albert C., 1st Lieut.
Hellweg, Charles E., Captain.
Hitchko, Michael J., 1st Lieut.
Jennings, Lawrence S., Captain.
Jensen, Marshall N., Major.
Johnson, Benjamin H., Jr., 1st Lieut.
Johnson, Lowell R., 1st Lieut.
Jones, William F., 1st Lieut.
Kaplan, Louis G., 1st Lieut.
Kaplan, Morris, 1st Lieut.
Ketler, George H., Captain.
Koehne, Frederick D., 1st Lieut.
Lamb, Francis D., 1st Lieut.
Lamb, Richard R., 1st Lieut.
Lame, Louis A., Captain.
Large, John S., Captain.
Lim, Kwong, 1st Lieut.
Lucido, Joseph L., Captain.
McBrearty, J. D., 1st Lieut.
McRae, James H., 1st Lieut.
Magliolo, Andrew J., Jr., Captain.
Matsko, Stephen E., 1st Lieut.
Matzner, Irving A., 1st Lieut.
Mead, James G., 1st Lieut.
Michael, Clifford, Major.
Mills, Clifford W., 1st Lieut.
Moore, Carl L., 1st Lieut.
Mounce, Chanceford A., Captain.
Moyer, Forrest G., Captain.
Mulmed, Earl I., 1st Lieut.
Murphy, George E., 1st Lieut.
Neighbors, Joseph B., Jr., Captain.
Nuttall, James B., Captain.
O'Connor, Michael J., Captain.
Park, Charles L., 1st Lieut.
Patterson, Fred L., Jr., 1st Lieut.
Pelton, Bernard L., Captain.
Peticolas, John D., Captain.
Poore, Alfred M., 1st Lieut.
Reis, Paul B., Captain.
Reisman, Samuel G., Captain.
Rest, David, 1st Lieut.
Rider, Thomas L., 1st Lieut.
Ruffin, Marshall De G., 1st Lieut.
Schow, Floyd W., Captain.
Schroeder, Herman J., 1st Lieut.
Schultz, Samuel K., Major.
Schutz, Sigmund, 1st Lieut.
Schwartz, Simon D., Captain.
Scott, Wirt S., Jr., 1st Lieut.
Shields, Thomas S., Captain.
Silver, Michael W., 1st Lieut.
Simons, Stanley J., Captain.
Smith, James J., 1st Lieut.
Spoeneman, Marlin C., Captain.
Sposato, Emil, Captain.
Stem, William A., 1st Lieut.
Tichenor, Clifford J., Captain.
Trockman, Richard J., 1st Lieut.
Wall, Edward C., Captain.
Wallace, Henry G., Captain.
Winsauer, Henry J., 1st Lieut.
Yavarow, Mully Millin, 1st Lieut.

ORGANIZATION SECTION

PROCEEDINGS OF THE ATLANTIC CITY SESSION

MINUTES OF THE NINETY-THIRD ANNUAL SESSION OF THE AMERICAN MEDICAL ASSOCIATION, HELD IN ATLANTIC CITY, JUNE 8-12, 1942

HOUSE OF DELEGATES

First Meeting—Monday Morning, June 8

The House of Delegates convened in the American Room of the Hotel Traymore and was called to order at 10:15 a. m. by the Speaker, Dr. H. H. Shoulders.

Preliminary Report of the Reference Committee on Credentials

A preliminary report of the Reference Committee on Credentials was submitted by the chairman, Dr. J. Newton Hunsberger, Pennsylvania, who reported that about one hundred and thirty-five delegates with proper credentials had registered.

Roll Call

The Secretary called the roll and, after a supplementary report from the Reference Committee on Credentials regarding alternate delegates, announced that a quorum was present.

Adoption of Minutes of Cleveland Session

On motion of Dr. E. G. Wood, Tennessee, seconded by Dr. John Z. Brown, Utah, and carried, the House dispensed with the reading of the minutes and adopted the minutes as published and circulated.

Distinguished Service Award

Dr. Roger I. Lee, Acting Chairman of the Board of Trustees, stated that the Board regretted that Dr. Arthur W. Booth, Chairman of the Board of Trustees, was unable to attend the annual session because of illness and then presented the following report:

The Committee on Distinguished Service Awards of the American Medical Association submitted five names to the Board of Trustees.

In accordance with chapter VI, section 5, of the By-Laws, the Board has selected by ballot the following names for presentation to the House of Delegates in alphabetical order, and presents a brief statement concerning each of them.

Dr. George W. Crile is distinguished as a surgeon, a scientific investigator and a leader. He has been chairman of the board of regents of the American College of Surgeons, has introduced new procedures of importance in surgical science and is the author of several books.

Dr. Ludvig Hektoen has been for many years distinguished as a leader in the field of pathology. He is chairman of the advisory committee of the National Cancer Institute and is chairman of the Committee on Scientific Research of the American Medical Association. He has been chief editor of the ARCHIVES OF PATHOLOGY from its inception and is editor of the *Journal of Infectious Diseases*. He was director of the McCormick Institute for Infectious Diseases and has contributed much important research in the fields of infectious diseases and preventive medicine. He was for many years professor of pathology at the Rush Medical College and is now emeritus professor. Last year he was awarded the Distinguished Service Award of the State Medical Society of Wisconsin.

Dr. Elliott P. Joslin is known throughout the world for his contributions to our knowledge of diabetes and for his educational contributions in this field for both the medical profession and the public. He has participated in graduate education and is the author of several books of distinction.

The Speaker appointed as tellers Drs. J. Q. Graves, Louisiana; George W. Kosmak, New York; George P. Johnston, Wyoming; Lowell S. Goin, California, and H. G. Hamer, Indiana.

The tellers spread the ballot, and the Secretary announced that one hundred and forty-one votes had been cast, of which Dr. Hektoen received fifty-eight, Dr. Crile fifty-five and Dr. Joslin twenty-eight.

The Speaker announced that no nominee had received a majority of the ballot cast and that the Chair would rule that the name of Dr. Joslin be dropped and that the members of the House would prepare their ballots on Drs. Crile and Hektoen.

The tellers spread the ballot, and the Secretary announced that one hundred and forty votes had been cast, of which Dr. Hektoen received seventy-six and Dr. Crile sixty-four.

The Speaker declared Dr. Ludvig Hektoen, who had received a majority of the votes cast, to be elected by the House to receive the Distinguished Service Award of the American Medical Association.

Address of the Speaker, Dr. H. H. Shoulders

The Vice Speaker, Dr. R. W. Fouts, Omaha, presided while the Speaker, Dr. H. H. Shoulders, read his address, which was referred to the Reference Committee on Reports of Officers:

Mr. Speaker, Members of the House of Delegates and Guests:

This is the fifth session of the House of Delegates over which it has been my privilege to preside as your Speaker—an honor for which I have an increasing sense of gratitude.

Many important events have taken place in the world since we met a year ago. The one event of transcendent importance to all of us is the entrance of the United States into the World War. We are told that the purpose of this war effort is to preserve our American way of life. Certainly no more laudable purpose could inspire a people or a nation to effort and to sacrifice. No one has defined precisely what is meant by the expression our American way of life, yet we all sense its meaning. Its principal attribute concerns freedom in all its forms. We know that this attribute distinguishes it from the way of life in most other countries and nations. We know that it was conceived, established and vouchsafed to us by the vision, the wisdom and the sacrifice of our forefathers. We recognize that its record of achievement in human welfare and happiness is without a parallel in human history. We now know also that, if it is to survive in the world, its preservation is the particular task of this generation. The thought that this way of life could and might be lost has been impressed on the people of this nation with tremendous force within the last year. This terrible thought seems to have had the effect of stimulating in all of us a much higher appreciation of its value as well as an appreciation of the tragic consequences which would follow its destruction. This way of life has been assailed in several different ways in recent years, and the House of Delegates has made a record in its defense which, it seems to me, is worth brief review at this time.

Four years ago (1938) we met in extraordinary session to consider actions which should be taken with reference to an emergency situation. That situation arose from an attempt that was being made to develop in this country a new and alien form of medical practice. The proposal, as you know, had its real origin and development in an absolute monarchy which, by a process of transition, has been converted into a totalitarian state. You gave serious consideration to the proposal and reached the conclusion that it contained the elements of possible threat to our American way of life. You expressed a conviction then that the freedoms embraced in our methods of delivering medical care are an essential part of our American way of life and have an importance equal to that of other freedoms embraced in it. You therefore took action to oppose the adoption of the proposal.

Similar attempts have recurred in different forms and under different types of leadership in the years that have passed since 1938. In each instance your reactions to them have been the same. In 1940 it was suggested that our nation might be threatened by a military force and that it would be prudent and patriotic for the House to take action looking to the creation of a state of medical military preparedness. You took such action then with results which are known to all. Time proved that foresight to have been justified. War did come eighteen months later and in such a way as to subject our nation to the gravest threat it has ever faced.

At first glance a similarity between these several threats is not apparent. Careful observation, however, brings out a definite similarity among all of them. It is true that the approach of each was different, the persons involved were different and the methods employed were and are different. They are similar in the sense that each has constituted a threat of more or less magnitude to the fundamental freedoms in our American way of life. The actions of the House of Delegates on these several occasions have been entirely consistent. Each attack, regardless of its form, has met your active opposition. When the proposals were political in nature and appeared to be limited in scope to the field of medical care, you took action in opposition to their adoption. When the military threat appeared as nothing more than a glimmer on a distant horizon, you took action as patriotic American citizens to defend the whole of our way of life. I shall not attempt to review in any detail the several actions you have taken. This much must be said, however: the several actions you have taken are consistent with one another. They are consistent also with an attitude of loyal devotion to all these freedoms which constitute the basic elements in our way of life. You have used with prudence the powers you possessed in the most effective manner you could use them. When the expression of a profound conviction by resolution was the only weapon at your disposal, you expressed it by unanimous action.

In this tragic hour it seems to me that you can look back on the record you have made in this brief period and on this vital issue with a justifiable sense of pride and satisfaction. We are all called on to surrender for the period of this emergency some of the freedoms to which we are accustomed. We do this willingly and wholeheartedly, not because we have abandoned them, but for the purpose of making more effective the national effort in their defense and to the end that they will be made secure forever. It has been said that genuine religion and genuine patriotism find their highest forms of expression in sacrifice. As far as I am concerned, that philosophy is true. Certainly words and beautiful phrases can be and have often been used to deceive. The deceptive use of words by political leaders and agitators obviously is responsible for the tragic state of the world today. Willing sacrifice for the preservation of a principle is the most dependable test of devotion to it. By such a test your loyalty to our American way of life has been proved. It seems to me that that record is altogether sufficient to give to the American people—to soldiers and to the mothers and fathers of soldiers—the highest form and the fullest measure of assurance as to what you and the profession you represent can be depended on to do today, tomorrow and until victory has been won.

In Memoriam

In accordance with the established custom of the House of Delegates of taking official notice of the death of Fellows who have served the Association in official capacities, either as members of the House or as officers of the Association, the Speaker called the roll of those who had passed away since the House met in June of 1941, as follows:

(The dates following the names indicate years of service in the House or as officers of the Association.)
James N. Baker, Alabama, 1930-33; 1935-41.
William Hemphill Bell, U. S. Navy, 1907.
Edmund R. Brush, Ohio, 1926-28; 1930-31; 1934-35; 1938-41.
Robert C. Bryan, Virginia, 1919.
Charles A. Dukes, California, 1933-38; 1940. Vice President 1941-42.
William A. Ellingwood, Maine, 1934-41.
William J. Frick, Missouri, 1916-17.
Henry D. Furniss, New York, 1913.
T. W. Gillespie, Illinois, 1925.
Schuyler Colfax Graves, Michigan, 1909.
George A. Hendon, Kentucky, 1928-31.
S. W. Johnston, Mississippi, 1924-26.
Eugene S. Kilgore, California, 1920.
Bransford Lewis, Missouri, 1913.
Dean Lewis, Baltimore, Maryland. Section on Surgery, General and Abdominal, 1915-17. President-Elect 1932-33; President 1933-34.
William D. Martin, Pennsylvania, 1919.
Charles H. McCully, Indiana, 1910.
William Neil McDonell, U. S. Navy, 1922; 1932.
John J. McLoone, Arizona, 1916.
S. K. Morrison, Nevada, 1924.
Howard Morrow, San Francisco, California. Vice President 1938-39.
William H. Myers, Georgia, 1929-41.
Juan C. Nanagas, Philippine Islands, 1921.
Charles S. Skaggs, Illinois, 1928-38.
Rock Sleyster, Wisconsin, 1913-14; 1918-26; Vice Speaker House of Delegates 1922-26; Trustee 1926-37; President-Elect 1938-39; President 1939-40.
Charles H. Stoddard, Wisconsin, 1916.
Terry M. Townsend, New York, 1929; 1935-38; 1941.
R. H. Walker, West Virginia, 1932.
Casey A. Wood, Pasadena, California. Section on Ophthalmology 1904.
Ross A. Woolsey, Missouri, 1923.

On motion, duly seconded and carried, the delegates arose and stood in silent tribute to the memory of the deceased delegates and officers.

Reference Committees

The Speaker, before announcing the personnel of the Reference Committees, asked and received permission to name two additional reference committees, namely the Reference Committee on Executive Session and the Reference Committee on Military Preparedness. The personnel of the Reference Committees as appointed by the Speaker is as follows:

SECTIONS AND SECTION WORK

Arthur T. McCormack, Chairman.....Kentucky
L. G. Christian.....Michigan
Olin H. Weaver.....Georgia
B. F. Cook.....Vermont
Arthur J. Bedell.....Section on Ophthalmology

RULES AND ORDER OF BUSINESS

Thomas F. Thornton, Chairman.....Iowa
A. A. Walker.....Alabama
E. N. Roberts.....Idaho
F. J. Savage.....Minnesota
John Z. Brown.....Utah

MEDICAL EDUCATION

Walter G. Phippen, Chairman.....Massachusetts
James R. Miller.....Connecticut
Edward H. Skinner.....Section on Radiology
L. J. Menville.....Louisiana
A. W. Adson.....Minnesota

LEGISLATION AND PUBLIC RELATIONS

E. S. Hamilton, Chairman.....Illinois
Don F. Cameron.....Indiana
Stephen E. Gavin.....Wisconsin
Henry A. Luce.....Michigan
Carl R. Steinke.....Ohio

HYGIENE AND PUBLIC HEALTH

Felix J. Underwood, Chairman.....Mississippi
W. F. Draper.....U. S. Public Health Service
Holman Taylor.....Texas
Robert L. Anderson.....Pennsylvania
F. S. Crockett.....Indiana

AMENDMENTS TO CONSTITUTION AND BY-LAWS

Walter E. Vest, Chairman.....West Virginia
Edward M. Pallette Sr.....California
Walter F. Donaldson.....Pennsylvania
Karl S. J. Hohlen.....Nebraska
William Weston.....Section on Pediatrics

REPORTS OF OFFICERS

Deering G. Smith, Chairman.....New Hampshire
Edward C. Podvin.....New York
Thomas A. Pitts.....South Carolina
J. H. Irwin.....Montana
Meredith Mallory.....Florida

REPORTS OF BOARD OF TRUSTEES AND SECRETARY

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Parke G. Smith.....Ohio
J. F. Hassig.....Kansas
William R. Molony Sr.....California
A. R. McComas.....Missouri

CREDENTIALS

J. Newton Hunsberger, Chairman.....Pennsylvania
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H. B. Everett.....Tennessee
Thomas M. Brennan.....New York

MISCELLANEOUS BUSINESS

Charles G. Strickland, Chairman.....Pennsylvania
J. T. Donovan.....New York
H. C. Macatee.....District of Columbia
Andrew F. McBride.....New Jersey
John H. Fitzgibbon.....Oregon

EXECUTIVE SESSION

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Lucius F. Donohoe.....New Jersey
Robert E. Schlueter.....Missouri
E. H. Cary.....Texas
Clyde L. Cummer.....Section on Dermatology and Syphilology
Walter W. King.....Colorado
Lloyd Noland.....Alabama

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Francis F. Borzell.....Pennsylvania
William D. Johnson.....New York
S. E. Thompson.....Texas
George F. Lull.....U. S. Army
Harold W. Smith.....U. S. Navy
Charles H. Phifer.....Illinois

SERGEANTS AT ARMS

Frank E. Reeder.....Michigan
J. R. Westaby.....South Dakota
A. S. Risser.....Oklahoma

TELLERS

J. Q. Graves.....Louisiana
George W. Kosmak.....New York
George P. Johnston.....Wyoming
Lowell S. Goin.....California
H. G. Hamer.....Indiana

Address of President Frank H. Lahey

The Speaker resumed the chair and presented the President, Dr. Frank H. Lahey, Boston, who delivered the following address, which was referred to the Reference Committee on Reports of Officers:

Mr. Speaker and Members of the House of Delegates:

It is my desire to express in my first statement my appreciation of the willingness of the Association and its officers to permit me to employ for war work a large part of the time which under less unusual conditions would have been employed in organization interests of the American Medical Association. Whenever I have sought advice concerning my responsibility to the Association and to the national government, the reply from your officers and your headquarters has been unhesitating, unequivocal and unselfish. It has been that I was to be at complete liberty to neglect any presidential duties to whatever degree I deemed the immediate needs of the emergency demanded.

It would be impossible for me to tell you what an aid and comfort the Secretary and the Editor of the Association have been to me, with their years of experience. The generous donation of this experience and their advice has been of such assistance as to aid me immeasurably in the conduct of my duties. I am sure also that they have protected me from mistakes which would have complicated my position not inconsiderably.

While I have known the Trustees, the Council members, most of the members of the House of Delegates and other officers of the Association in the past, the closer contacts which I have had over the two years I have been in office as President-Elect and President have given me the opportunity to know them even better and to appreciate even more the time and effort they devote to the Association. Hours spent with the Board of Trustees have opened my eyes to the magnitude and seriousness of their assignments. Critical and intimate participation in the deliberations of your financial committee have impressed me with the care and caution exercised in the management and investment of your funds. I very much doubt that there exists a record in management of trust funds better than that made by your capable secretary, treasurer and financial committee. I do not believe that it will ever be possible for individuals in medicine to realize how seriously these men devote themselves to these positions or to appreciate fully where medicine, medical education and hospital practice would be today without this unselfish devotion to what literally amounts to a cause.

To visit the various state, county and special societies has, because of their generous hospitality and friendliness, been no hardship but a real pleasure. In view of the apprehension concerning the effects of the presidency of the American Medical Association on the health of those who occupy it, I would say that, having the personal experience which I have had with the duties of the office, I believe that it is possible, with intelligent planning and the cooperation which one receives from every one, to complete these two years spent as President-Elect and President of the American Medical Association in better health than that with which one starts the service. These travels have, in addition, in these unusual times provided for me the opportunity to preach the gospel of realistic awareness and aggressive preparedness. Perhaps in some measure because of the unavoidable prominence which the position of President of the American Medical Association carries with it, it has resulted in my being nominated by the President of the United States together with Harvey Stone, C. Willard Camalier, James E. Paullin and Harold S. Diehl to the Committee on Procurement and Assignment as one of the representatives of American medicine to participate in national war activities. For this assignment I am deeply grateful, as are, I know, the other members of the board. Without this assignment we all realize that at our age we might well be, as are so many other doctors of similar age at this time, consumed with a patriotic desire to serve the country but at least as yet unavoidably without opportunity to do so. I know that I can speak for this board, while not appointed by but nevertheless representative of the American Medical Association, when I say that it appreciates gratefully its good fortune in being selected and the privilege of having the opportunity to represent American medicine in this undertaking and that it is conscious of the fact that the honor and good name of American medicine are at stake in how well and intelligently American medicine cares not only for the armed forces and associated federal agencies but also for the civilian population, industry, hospitals and medical schools in the present and coming emergency. It is my sincere conviction that when this difficult ordeal for our country and its citizens is successfully terminated, as you and I know it eventually will be, and viewed in retrospect, the fact that medicine had so intelligently and forehandedly organized itself in the American Medical Association will be revealed to even doubting minds as a most important factor in contributing to this successful outcome.

May I say one more word: since I wrote this and as I travel the country—and I would, I believe, not be in my character if I did not preach a little—it is my definite conviction that, while industry and many other sections of the country are accurately and realistically aware of the situation, the country is still in an undue state of optimism. If we could but preach to this country and to the doctors—and this comes to me not only in a general way but in my position as chairman of the Board of Procurement and Assignment and relates itself to the number of doctors who have responded—and if the country could but realize that the successful approach to

this emergency is not believing what is pleasant, because that is unlikely to be true, but believing what is unpleasant, because that is likely to be true, we would come nearer bringing this to a successful outcome sooner than we shall under the pleasant plan of believing pleasant things instead of unpleasant things. That is a little complicated, but nevertheless it really means that I believe that medicine in the country at large is still not facing the facts as frankly as it should, and I believe that we as leaders in this country can go out and still do a good deal to preach this gospel, that optimism is one of the things which can lead to our downfall. We do not suffer from the urgency of the situation that the Japs or the Germans do. They must win or die. There is no urge like that of necessity, and it is my definite opinion that this country is still not convinced that its situation is one of urgent necessity.

Address of President-Elect Fred W. Rankin

The Speaker presented the President-Elect, Dr. Fred W. Rankin, Lexington, Ky., who delivered the following address, which was referred to the Reference Committee on Reports of Officers:

Mr. Speaker and Members of the House of Delegates:

Custom dictates that the President-Elect address the House of Delegates at the first meeting of the annual session. This is a good custom for it permits him to give an account of his stewardship and to record observations gleaned in his travels throughout the country during the past year. In addition, he may offer any suggestions which seem pertinent.

Today's world events, perhaps dimly visualized at the last session of the American Medical Association, have so engulfed our nation that we have but one business now—the business of war. All our efforts are focused on this one objective, and everything associated with our professional lives is directly or indirectly concerned with war problems.

When I began to travel around the country last summer and autumn, visiting various state medical societies and other medical units, an entirely different atmosphere prevailed than now exists and the sentiment of the country as a whole, and physicians as a class, was distinctly divided on the question of our active participation in the struggle. Every one accepted either graciously or grudgingly the necessity of a program of preparedness, but only a small percentage of the people subscribed with hearty enthusiasm to any idea of immediate participation in hostilities. This sentiment, it seemed to me, varied considerably in different parts of the country, depending largely on geographic location. Following the opening of an undeclared war by Japan, sentiment immediately changed, unity appeared and the entire citizenry alined itself wholeheartedly in cooperation with the Allied Nations in war effort. It is unnecessary for me to recall to you in detail the steps which have been pursued by the American Medical Association in planning a distribution of doctors, with proper allocation to the armed forces and without dislocation of civil practice beyond a reasonable degree.

Circularization of the profession by questionnaire and subsequent evaluation of the professional capacities of each individual physician by state committees accumulated enormous amounts of data which have subsequently been made available to the Surgeon Generals of the Army and the Navy. These questionnaires were answered by each one of you. Immediate use of the data furnished by these questionnaires was extremely advantageous, for after war was declared the medical profession found itself more forward in its war efforts than other groups. Immediately there was established in Washington an agency called the Procurement and Assignment Service, whose duty it is to supervise the selection and allocation of the entire profession on a voluntary basis. This agency has functioned from its inception with enthusiasm but not without perplexities. The rapid expansion of the medical services of the Army has at times almost overwhelmed it because of lack of personnel and funds, difficulties which seemed almost insurmountable. Each one of you has taken part in the effort of your state, district or county to make the program of the Procurement and Assignment Service a success. That is as it should be, for the medical profession is charged with running its own program. I have no knowledge of any other group to which the Administration has given this privilege, and it is essential that our constituted agencies be supported vigorously to the end that the war effort be properly and successfully prosecuted.

To admit that we have made some mistakes and that accomplishment has not been 100 per cent adequate up to the present time is not an unworthy confession. We have made mistakes; but they have been honest mistakes which have been the result of confusion and circumstances for which the profession has been only partly responsible. Nevertheless the fact remains that we do share a distinct responsibility for the fact that a sufficient number of physicians of proper age and capacity to care for the rapidly increasing needs of an expanding army has not been immediately forthcoming. The number of volunteers to the Procurement and Assignment Service, including physicians of all ages, as of May 1 was less than thirty-five thousand of the whole medical profession. An accelerated recruitment program which cuts all "red tape" and approaches physicians directly has stimulated the profession to more prompt action. This decentralization of the program and emphasis on state efforts has been productive of encouraging results, and I have no doubt that adequate numbers of medical men will thereby be made available. I believe that you will agree with me that it is our duty as members of the medical profession to stand back of the Procurement and Assignment Service in our capacities as individual physicians and representatives of state or corps area units. This agency must function, for, in a war such as we are engaged in, total effort is not too much.

We must understand that this is a war of survival. We must understand that we fight with unscrupulous brutal enemies in a conflict whose technic by reason of motorized and mechanized equipment of warfare is not only an entirely new technic but one of savagery employed against both armed forces and civilian populations. We must recognize that this new warfare has speeded up the tempo of action to the point where only those with the stamina of vigorous youth can practice it. This is a war of young men. Older physicians, many of whom served in the last war, have in large numbers signified their desire to offer their services again, but obviously they can be utilized in many other positions more advantageously than with the armed forces. Is it not, then, an admirable duty of the older men to encourage physicians of the proper age to enter military service? The places of these younger men, both in civil practice and in the teaching institutions, must be taken by members of the medical profession who are physically disqualified for service or who are beyond the age limit for active duty.

Army authorities, recognizing the need for young men, have ruled that men over 56 years of age may not serve with troops. Furthermore, the Army has recognized the great necessity for the utilization of professional specialists in their particular fields. Guided by the advice of committees of many medical organizations, the Surgeon General's Office is attempting to place round pegs in round holes, thus not only increasing the efficiency of our professional efforts but avoiding many of the pitfalls which the hurried expansion of World War I brought about. I can testify heartily to the enthusiastic reception which my efforts have received in the Surgeon General's Office and I feel confident that I am speaking for my colleagues from civil life who are on duty there with me.

As we proceed with our war duties, and each one of us whether in uniform or not is in this war and on duty, we must recognize that furnishing medical men to the armed forces and to the civilian population connotes a continuing supply of medical men, and I hope that that supply may be continued under present day standards of medical education, even including completion of an intern year. Whether such standards will have to be revised in the future is a problem to be answered only by the changing tactical situation. Certainly it should be recognized that the supply of physicians to the armed forces and for civil practice can be continued only by maintained production of physicians. That many of the medical schools have already contributed affiliated units or sent a goodly percentage of their faculties to the Army or the Navy is well known. They have accelerated their teaching program at the

same time and, in consequence, officials charged with securing medical men for war services should recognize that still further extensive changes in faculties are inadvisable for the immediate future. Most hospitals and medical schools, I believe, have been thoroughly honest in establishing their lists of essential men. Many of them now have in service, or preparing to go into the service, as much as from 40 to 50 per cent of their personnel. This is eminently fair in the present stage of hostilities, and, if it has seemed wise to place on the essential list a small percentage of young men within the limits of draft age, I believe we should be hesitant to seek abruptly to change this system.

Unquestionably the younger members of medical school faculties will join the colors in larger and larger numbers. Nevertheless, with the plan of maximum production in mind, under present standards we should seek to assist teaching centers and hospitals in maintaining efficient teaching staffs. That postgraduate education of specialists may of necessity soon be greatly altered seems inevitable under rapidly changing world conditions.

The trend toward training specialists by long term residencies will have to be altered greatly or perhaps abandoned temporarily if the war continues for a long time. The corollary to this is that military hospitals should make every effort to continue postgraduate teaching of the younger men who have been detailed to them so that these men in the postwar period may receive credit at the hands of their specialty boards for work done in service. Many of the boards have agreed to this step, and I have no doubt that others will be glad to accept the principle as time goes on. A large part of the burden of postgraduate education of specialists will in the future fall on many of the hospitals of two hundred and fifty bed capacity or thereabouts located in cities of 50,000 to 150,000 population. In many instances such hospitals are now doing an excellent job of training in specialties—in the surgical specialties particularly—and with experience and a more adequate realization of the necessity of maintaining present standards I am convinced that more and more postgraduate training will be accomplished in this hospital group.

The present day situation, even before the war, of having more hospital posts available than there were interns has had a salutary effect on many hospital staffs as far as professional organization and evolution of teaching opportunities are concerned. That this same movement to stimulate teaching progress in smaller hospitals located in smaller communities would have been a natural evolution is obvious, and, while such progress will unquestionably be handicapped and perhaps halted by long-time war activities, it is important to look to the future in such matters. I am confident that we may look hopefully for the successful development of a planned program for participation of these centers in the postwar economy.

The postgraduate education of the general practitioner is an entirely different problem from that of a specialist. He obtains postgraduate training either by attending refresher courses in institutions or by attending medical meetings. Actually the vast majority of his continuing education is through attendance on medical meetings which are planned to furnish intensive instruction in a wide variety of professional subjects presented by competent and well known leaders in medical fields. Over a period of years I have been privileged to attend many of these meetings under the auspices of various medical organizations. I have observed the three and four day meetings, and more recently I have been around the country to a series of one day meetings, all of which were essentially of the same character. My observation has been that the general practitioners and part time specialists, and many full time specialists, attend this type of medical program with great enthusiasm and earnestness. I have seen men come into the meeting hall at 8 o'clock in the morning and, except for short intervals for meals, stay until well into the evening. Always the audience was large, always it seemed intensely interested, and I believe the meetings were without question uniformly profitable. The type of program, which featured intensive instruction by competent teachers with elimination of discussions which are usually characterized by their reference to personal experiences limited to a small group of cases or a single case, probably accounted for the success of the meetings to which I refer. If these observations are worthy of the interpretation I put on them, it is not too bold a suggestion to offer to the proper authorities of the American Medical Association that a similar type of meeting might be conducted in various parts of the country under the auspices of the parent association. I believe that such programs would further enhance the interest of the medical profession in postgraduate instruction and that the type of programs I have discussed might be advantageously modified in many ways. For instance, these sponsored sectional meetings throughout various geographic areas of the United States are at least worth experimenting with and would, I feel, be a welcome change from the present day type of program to one which is lecture type in part or in whole. We live in a streamlined world in which unorthodox things are continually being accepted, and it is entirely possible that medical programs are not immune to modern changes.

I would be failing in appreciation if I did not acknowledge before you the debt I owe to the headquarters staff of the American Medical Association in Chicago and to the Board of Trustees for the many courtesies and helpful assistance I have received from them during the past year. The ramifications of our medical profession's various activities can be appreciated only by one privileged to view them from within; and the efficient manner in which they are conducted can be properly evaluated only under the scrutiny of close association. As I have gone about the country to address medical organizations I have been impressed with the broad functional scope of the American Medical Association, and I have come to realize more fully the demands which are made on the men who shoulder willingly and efficiently the details of managing this great organization. A corollary conclusion is that a buffer should be placed against overconscientious fulfilment of their responsibility, to the detriment of their health. Steps to provide assistance have already been made and no doubt will be increased in the future, in spite of reluctance on the part of these faithful officers to receive it. It is easy to advise one to slow down, to relinquish part of the burden and in consequence to prolong his usefulness, but my own observation and experience have been that it is difficult to arrest the will to serve, and I have little confidence that the foregoing sound advice will be accepted in full.

As is so often true of the experiences which mean most to us, their very complexity and greatness preclude analysis or reduction to description. In addition to the manifold emotional reactions, which are beyond expression, I have come to feel the gratification which results from association with an organization which is not only fundamental and of proved worth in meeting present human needs but at the same time so constructed and infused with imaginativeness that it possesses the perspective vision necessary to foresee the exigencies of the future.

Altogether, the pleasant tasks of my office, which in the main consist of visiting medical units in many places, or renewing old friendships among the profession, of making new acquaintances in widespread areas and of feeling and seeing the fine spirit of service which motivates our guild, have combined to make my journeyings a joyous Odyssey.

REPORTS OF OFFICERS

Report of the Secretary

Dr. Olin West, Secretary, presented his report as printed in the Handbook, which was referred to the Reference Committee on Reports of Board of Trustees and Secretary, except the proposed amendment to the Constitution, which was referred to the Reference Committee on Amendments to the Constitution and By-Laws.

Report of Board of Trustees

Dr. Roger I. Lee, Acting Chairman, presented the following supplementary report of the Board of Trustees, which was adopted by a rising vote:

SUPPLEMENTARY REPORT OF BOARD OF TRUSTEES

The Board of Trustees regretfully calls the attention of the House of Delegates to the death, during the past year, of a

former president and chairman of the Board of Trustees, Dr. Rock Sleyster of Wauwatosa, Wis. He was an experienced soldier in the ranks of organized medicine, rising from his first position as secretary of a county medical society to the presidency of the Association. His devotion to the ideals of American medicine may well be an inspiration to every American physician.

Dr. Charles Alfred Dukes, vice president of the American Medical Association, died in Oakland, Calif., on March 13. Throughout his career Dr. Dukes gave freely of himself to public service and to medical organization. He had been a member of the House of Delegates and a wise leader in the affairs of organized medicine in California. In his capacity as a member of our Committee on Medical Preparedness and as corps area chairman of the Procurement and Assignment Service for Physicians, Dentists and Veterinarians he gave unstintedly of his time and of his health.

Dr. William Dick Cutter, secretary of the Council on Medical Education and Hospitals since 1931, died on January 22 after a brief illness. In his position on the headquarters staff of the American Medical Association, which he occupied for eleven years, he carried great responsibility and manifested excellent judgment and leadership.

The Board of Trustees expresses here its appreciation of the services and devotion of these three leaders and suggests to the House of Delegates that it express its sense of loss in their absence from this session.

Dr. James R. Bloss, Chairman of the Executive Committee of the Board of Trustees, presented the report of the Board of Trustees as presented in the Handbook as well as a second supplementary report of the Board of Trustees relative to meetings with hospital associations, as follows:

SECOND SUPPLEMENTARY REPORT OF BOARD OF TRUSTEES

The Board of Trustees has had meetings previously with hospital associations, and at least one of these hospital associations has announced plans at variance with principles set forth by the House of Delegates.

The Board has already considered this matter as a committee of the whole and, in view of the divergent views concerning hospital plans, felt that nothing would be gained by further conferences with hospital associations until more information is available through the Bureau of Medical Economics. Such studies and compilations are in active progress, but, owing to inevitable dislocation due to the war and to constant changes in plans for hospitalization, and the heavy responsibilities laid on the Bureau of Medical Economics by the war effort, these studies have not been completed in spite of the employment of additional help. The Board would suggest that opportunity be given for further study based on the studies by the Bureau of Medical Economics.

RESOLUTION EXPRESSING APPRECIATION OF AMERICAN MEDICAL ASSOCIATION FOR FRIENDLY COOPERATION OF THE BROADCASTING COMPANIES

Dr. Bloss also presented the following resolution which had been adopted by the Board of Trustees the day before:

WHEREAS, the National Broadcasting Company, the Columbia Broadcasting System, the Blue Network and numerous individual radio stations have from time to time during the past year participated with the American Medical Association or, on request of the Association, with related medical and health agencies in health education broadcasting; now, be it therefore,

Resolved, by the Board of Trustees (House of Delegates) of the American Medical Association that the Bureau of Health Education be directed to transmit on behalf of the Association to the radio stations and networks concerned a copy of this resolution expressing the appreciation of the American Medical Association for their friendly cooperation.

The Speaker referred the report of the Board of Trustees to the Reference Committee on Reports of Board of Trustees and Secretary with the following exceptions: That portion of the report relating to the Bureau of Health Education was referred to the Reference Committee on Hygiene and Public Health; that portion relating to the Bureau of Legal Medicine and Legislation, to the Reference Committee on Legislation and Public Relations; that portion dealing with medicine and the war to the Reference Committee on Military Preparedness; the supplementary report to the Reference Committee on Hygiene and Public Health; the portion of the report referring to a committee to study the relationship of medicine and law, to the Reference Committee on Legislation and Public Relations, and the supplementary report, first read, to the Reference Committee on Legislation and Public Relations.

Report of Treasurer

Dr. Herman L. Kretschmer, Treasurer, presented his report as printed in the Handbook, which was referred to the Reference Committee on Reports of Board of Trustees and Secretary.

Report of Judicial Council

Dr. George Edward Follansbee, Chairman, presented the report of the Judicial Council as presented in the Handbook, which was referred to the Reference Committee on Amendments to the Constitution and By-Laws except that portion which relates to a policy relationship between the scientific sections and the House, which was referred to the Reference Committee on Sections and Section Work.

Report of Council on Medical Education and Hospitals

Dr. Charles Gordon Heyd, Acting Chairman of the Council, presented the Report of the Council on Medical Education and Hospitals as presented in the Handbook, together with the following revision of the Essentials of an Acceptable School for Clinical Laboratory Technicians, which was referred to the Reference Committee on Medical Education:

Section I. Administration. Subsection I. To be amended by adding the words *approved medical schools*, the amended section to read:

1. Acceptable schools for training laboratory technicians may be conducted by *approved medical schools*, general hospitals, or state health laboratories affiliated with hospitals, where the majority of the student's practical training is received. This arrangement should not discourage affiliation between the hospital and universities, colleges, public health laboratories or other hospitals.

Report of Council on Scientific Assembly

Dr. James E. Paullin, Chairman, presented the report of the Council on Scientific Assembly as printed in the Handbook, which was referred to the Reference Committee on Sections and Section Work.

Report of Committee on Medical Preparedness

Dr. Irvin Abell, Chairman, presented the following report, which was referred to the Reference Committee on Military Preparedness:

The Committee on Medical Preparedness of the American Medical Association was appointed at the June 1940 meeting of the House of Delegates in New York. A report covering its activities during the ensuing year was made at the June 1941 meeting of the House of Delegates in Cleveland. The present and final report covers its operations during the past year. It may be well to recall that the Committee on Medical Preparedness came into being as the result of a request of the Surgeon General of the Army that the American Medical Association undertake a survey of the medical personnel of the United States and its possessions to determine the number of physicians available for service in various capacities and to develop facts that would be useful in aiding the profession to render the greatest possible service in any national emergency that might arise. Among the objectives which the committee hoped to ascertain as fully as possible through this nationwide survey were (1) the number of physicians licensed to practice medicine, (2) the number capacitated for active service and the number of those incapacitated, (3) the number and location of physicians who may be qualified and available for service with the military forces of the nation and for other essential governmental services in case of national emergency, (4) the number available for service to the civilian population under emergency conditions, (5) the availability and qualifications of those who can serve acceptably in special fields of medicine, (6) the number and identity of physicians qualified for teaching and research who are believed to be essential for the proper maintenance of educational institutions and (7) the number and identity of physicians already engaged in governmental service. During the first year of this study the efforts of our country were directed toward preparedness, while during the second year the clarion call of war has demanded action.

THE CENSUS OF PHYSICIANS

The following information, statistical and otherwise, will attest the fidelity displayed by your committee in carrying out the instructions given to it by the House of Delegates.

The census of physicians, which was conducted by the Bureau of Medical Economics for the Committee on Medical Preparedness, began on July 5, 1940 with the mailing of schedules to approximately 180,000 physicians whose names were listed in the 1940 American Medical Directory. Of the 180,000 physicians, slightly more or less, who received this schedule, about 158,000, or approximately 86 per cent, supplied the information requested and returned the schedule to the American Medical Association. Schedules for the remaining 22,000 more or less physicians were prepared in the Bureau of Medical Economics or at the headquarters of some of the state medical societies with the incomplete information that was available in the American Medical Directory or from other sources. These schedules were marked "Incomplete," since all the information requested could not be supplied except by the physicians themselves. Since it was the desire of the staff to have in the punch card file information pertaining to all physicians in the United States, this method of preparing schedules for those physicians who, for some reason, failed or neglected to prepare their own schedules was used in order that a minimum of information might readily be tabulated for all physicians.

The census was undertaken to secure current information pertaining to the number, age, location, professional qualifications and other characteristics of individuals who comprise the medical profession in order that such information might be readily available to the Surgeon Generals of the Army and Navy in securing medical officers for war service.

It has been impossible for the staff that conducted the census of physicians to pursue the number of statistical analyses that could have been prepared from the data furnished by the medical profession. Only those statistical compilations that were deemed essential to a better understanding of the nation's available and effective medical manpower have been made.

No census figures express the quantitative value of the population group studied with any degree of accuracy except at a stated day or hour. It became necessary, therefore, to record changes in the census information as soon as the schedules were received. These changes fall largely into three or four groups, viz. deceased physicians, physicians recently licensed, physicians whose professional qualifications are changed and physicians who have changed their addresses. From the very beginning of the census, a part of the routine of the staff has been to correct the schedules and punch cards of physicians who fall in these four categories as quickly as reliable information of this nature has been received. It has not been possible to make changes in location on the listing sheets, but an effort has been made to keep up to date a system of follow-up in the published directory reports so that the latest known addresses of physicians might readily be found.

TOTAL NUMBER OF PHYSICIANS—VARIOUS SERVICES

Even before the census of physicians had progressed for no more than a week, deductions because of deaths were necessary. As time passed the names of newly graduated and licensed physicians were added. The result of two years of census effort with many corrections has given the committee records and punch cards for more than 181,500 physicians in the United States and its outlying territories and possessions. Of this number, some 176,000 physicians are located in the continental United States. Within the continental United States there were, as of Jan. 31, 1942, 85,964 physicians in general practice and 90,227 physicians (including those classified as fully qualified specialists devoting their full time to a specialty and physicians who devote only special attention or a part of their time to some special branch of medicine). The ratio of full time specialists to special attention physicians is about 43 to 57.

To arrive at the number of physicians who are engaged in the private practice of medicine, it is necessary to deduct the number of physicians who are engaged in some service exclusive of the private practice of medicine. The total number of physicians engaged in full time appointments is 7,216. Of these, 2,816 hold teaching appointments, 910 are engaged in full time research work, 1,179 hold executive positions and 2,243 are engaged in full time work in industry. It is believed that most of those in the last named category are actually contributing much to the health of the industrial population although in many instances not actually caring for the sick or injured workmen.

The total number of physicians found to be employed in some form of government service, as of July 1940, was 9,819. This number has probably changed considerably in the past two years with the addition or reduction of the number of physicians in the several governmental services.

In public health there were: U. S. Public Health Service, 1,789; state health departments, 1,410; local health departments, 2,341; Veterans' Administration, 1,779; Indian Field Service, 910; other federal agencies, 2,293.

In hospital service there was a total of 16,457 physicians: in hospital administration, 3,089; as residents, assistant residents and fellows, 6,149; as interns, 7,219.

RACES AND AGE GROUPS

Classified in private practice there were in the continental United States at the beginning of 1942 about 142,700 physicians of all ages according to the most reliable figures that can be drawn from the census data. Of the 176,191 physicians in the continental United States, 164,488 were white male, 8,035 were white female, 3,362 were Negroes (both sexes) and 306 were of other races.

Distributed by age and including both general practice and specialists, in January 1942 there were in the continental United States 42,721 physicians under 36 years of age, 38,212 physicians between 36 and 44 years of age inclusive, 31,904 between 45 and 54 years and 63,354 who were 55 years of age and older. Among the 176,191 there were 3,942 physicians who were 80 years of age and older, 255 who were 90 years of age and older and 6 physicians who were 100 years of age or older.

It will be seen from these figures that the medical manpower resources of the continental United States, for military purposes, at the beginning of 1942 numbered approximately 112,800 physicians, since that was the number within the age limit for service in the Army. The requirements of the Navy would be drawn from this same number, although the upper age limit for original commission in the Navy is 50 years.

It must be remembered, however, that not this entire number of about 112,000 physicians can be made available to the Army and Navy, since to provide the armed forces with war material with which to accomplish their mission it is necessary to provide health and medical services for the civilian and industrial population. It is known also that many of these 112,000 physicians could not qualify physically for full military service.

The 63,354 physicians who are 55 years of age and older cannot be expected to supply all the medical services needed by the civilian and industrial population even when reduced by the removal from the ordinary population of several million men in the armed forces.

Tables which show the numbers of physicians by age, specialty and location are too large and complicated to show here. Such tables have been prepared, however, and are available for use in connection with the medical war effort.

PROBABLE SHORTAGES IN CERTAIN SPECIALTIES

It is important also to make some mention of the relative numbers of physicians in certain specialties in relation to the military and civilian needs. There are certain specialties in which the number of qualified physicians is so small that when military and civilian needs are considered there appears at once a serious problem of equitable distribution of the available supply of specialists. The fields in which this problem is most serious are neurosurgery, plastic and maxillofacial surgery, orthopedic surgery, thoracic surgery, neurology, anesthesia, pathology, clinical pathology and bacteriology.

There is likewise a serious problem in relation to the supply of qualified physicians to supply certain services in industry.

An important work of the staff that has conducted the census has been the compilation of a file of physicians who are now on extended active duty with the armed forces arranged

according to the states that have contributed these physicians from their medical manpower resources. Within the last month there has been received at the American Medical Association a list of commissioned officers prepared from duplicates of the punch cards that are a part of the Adjutant General's records. Other lists have been received from the Surgeon Generals of the Army and Navy that enable the staff to keep the records at the American Medical Association as nearly correct and current as it is possible to do. Arrangements have been made to receive regular reports of the numbers and names of physicians who are being commissioned by the recruiting teams now working throughout the United States.

CLEARANCE OF PHYSICIANS

Since the primary object of the census was to accumulate information that could be made readily available to the Surgeon Generals of the armed forces in the performance of their duty to provide medical services for the military establishment, the data that have been collected have been arranged in a manner that could be utilized easily for reporting to the Surgeon Generals on the location, medical education, age, licensure and qualifications of physicians whose names might be submitted to this office. The basic parts of the census had been almost entirely completed when the Procurement and Assignment Service was authorized in October 1941. Immediately after the organization of the Procurement and Assignment Service, the census material which had been arranged in listings was put to practical use in the clearance of physicians who had applied for commissions in the Medical Corps. The medical preparedness section of the Bureau of Medical Economics was designated as the Consultant Office of the Procurement and Assignment Service, and the director of the Bureau of Medical Economics was made the supervisor of that consultant office.

Since November 1941, when the work of the medical preparedness staff of the Bureau of Medical Economics was coordinated with the Procurement and Assignment Service, the amount of work required for the processing of the names of physicians who had applied for commissions in the medical corps is represented by the following figures: The number of names cleared for commission, 13,468. Of these cleared names, 100 were those of Negro physicians, and 1,753 were marked for assignment to the air force. In addition to the names which have been processed for commissions in the Medical Corps, lists of about 7,000 physicians in general practice and the specialties have been prepared for the Selective Service System in connection with its program of rehabilitation.

RECRUITING TEAMS

During the third week of April of this year the Army adopted a new policy for the purpose of securing physicians for commission in the Medical Corps. At present there are recruiting teams each consisting of a medical officer representing the Surgeon General of the Army who is to make the physical examination, and a line officer representing the Adjutant General of the Army, who is to assist in preparing other papers and to administer the oath of office for physicians who are commissioned in the grade of first lieutenant and captain. Already requests for clearance of names have been received from several recruiting teams or state chairmen. It is anticipated that this office may receive such requests from a large number if not all of the state chairmen for the Procurement and Assignment Service or the recruiting teams in the several states. In addition to the information requested for physicians who are to be given the grade of first lieutenant and captain, the regular clearance forms are still being forwarded from the Procurement and Assignment Service in Washington for those physicians who presumably are to be given a grade above that of captain.

The length of time which is required for the clearance of any particular physician, if considered separately, is not great, but, when that amount of time is multiplied by several hundred forms that are received at one time, the amount of time required for clearance becomes considerable. If to this is added the requests for clearance for some three or four dozen from each of the states, the amount of time required for clearance then becomes very considerable. Each state is, quite naturally, anxious to receive its clearance papers as soon as possible; but only one state can be cleared at a time, and work is conducted in as orderly a fashion as possible, giving each request the priority of the order in which it is received.

Every effort has been made to make available to the Army, Navy, Public Health Service, Selective Service System and other governmental agencies, either directly or through the Procurement and Assignment Service, information to assist in the procurement of physicians to fill either general or specific assignments. Some interesting data have come out of this circularization of the profession which shows the trends and types of practice now most popular and which therefore indirectly influence army service.

PROCUREMENT AND ASSIGNMENT SERVICE ESTABLISHED

As these compilations and studies were being made by the Committee on Medical Preparedness it became apparent that certain conditions limited their utilization by the medical departments of the armed forces. Chief among these was the lack of volunteer applications for commissions in the Medical Corps, the greater percentage of calls to duty going to the Medical Reserve Corps and to the National Guard, the personnel of which was utilized to the extent made possible by physical fitness and availability of commissions commensurate with rank. The question of securing additional enlistments was given consideration by all of those cognizant of its need. The Subcommittee on Medical Education of the Health and Medical Committee recommended the establishment of an agency for the procurement of physicians for the armed forces, industry and the civilian population. This recommendation was referred to the Committee on Medical Preparedness, which, during its several sessions at Cleveland, canvassed the situation and presented to the House of Delegates a resolution relative to the establishment of a procurement and assignment agency to be concerned with the provision of medical personnel for the Army, Navy, Public Health Service and other agencies. This recommendation was unanimously adopted by the House of Delegates and subsequently sent to the Surgeon Generals of the Army, Navy and Public Health Service, to the Health and Medical Committee, to the administrator of the Federal Security Agency and to the President. This resolution was presented to the Health and Medical Committee at its meeting on July 2, 1941. The committee voted to adopt it in principle and to forward it to the Coordinator, Mr. McNutt, with the suggestion that he consult with the Secretaries of War and Navy and that all matters concerning details of organization remain contingent on action taken by these officials.

The Committee on Medical Preparedness met in Washington on Aug. 19 and 20, 1941 to consider this resolution in conjunction with representatives of the various federal agencies interested in securing physicians for their services. On Sept. 3, 1941 an executive order promulgated by the President established the Office of Defense Health and Welfare Services with the Federal Security Administrator, Mr. Paul V. McNutt, as director. The Health and Medical Committee was transferred to this office and given the specific duty of advising the director regarding the health and medical aspects of national defense exclusive of medical research and to assist in the coordination of health and medical activities affecting national defense. The resolution of the Committee on Medical Preparedness relative to the establishment of a Procurement and Assignment Service was referred to the Health and Medical Committee, which on October 22 held a meeting to initiate the development of such a service. The meeting was attended by the director of the Office of Defense Health and Welfare Services and his staff, by representatives of the Army, Navy, Public Health Service, Civil Service Commission, National Institute of Health, American Medical Association, American Dental Association, by the full membership of the Health and Medical Committee and by the chairmen of its subcommittees on Medical Education, Dentistry and Hospitals. An agreement on policy was reached and a commission appointed to draft a program for the Procurement and Assignment Service. On the receipt of its report Director McNutt transmitted its recommendation to the President with the result that the Procurement and Assignment

Service was established as one of the subdivisions of the Office of Defense Health and Welfare Services. The Health and Medical Committee and the Procurement and Assignment Service are closely correlated in that the Subcommittees on Dentistry, Hospitals, Industrial Health and Medicine, Medical Education and Negro Health of the two agencies have practically the same personnel. On December 18 at a meeting of the Board of the Procurement and Assignment Service with the preparedness committees of the American Medical Association, the American Dental Association and the American Veterinary Medical Association a definite organization was completed for the functioning of this service in relationship to needs of professional personnel in the war which broke upon us on December 7.

Approval was given to the constitution of committees in each of the corps areas and associated naval districts to function in an advisory capacity to the corps area commander, the committees to consist of a chairman, who will be the corps area representative of the Committee on Medical Preparedness of the American Medical Association, one physician representing medical education, one representing the hospital organizations, two representing the profession at large, two members of the dental profession and one member of the veterinary profession. In most instances the state chairmen of the Procurement and Assignment Service are the state chairmen of the Committee on Medical Preparedness of the American Medical Association. This close integration permits of an intelligent use of the data compiled by the Committee on Medical Preparedness to the end that the service rendered by the medical profession during the war will be used to the greatest possible advantage. The Committee on Medical Preparedness of the American Medical Association met in Washington on Jan. 30, 1942 with the Board of the Procurement and Assignment Service and representatives of the various interested agencies for the purpose of adopting final plans of procedure and action in utilizing the available professional personnel of the country for the duration of the war. Your committee has striven at all times to attain the objectives outlined in your instructions, which may be epitomized as loyal and complete participation in what is now an all out war effort. A final meeting of the Committee on Medical Preparedness was held in Chicago on May 9, 1942, at which its work for the past two years was reviewed. The census so far prepared is a continuing process, new schedules being required for recent graduates, older ones being withdrawn because of death or retirement. A large amount of clerical work is involved in change of addresses and in names of physicians ordered to active duty. An important phase of the census pertains to the professional and ethical qualifications of those on the roster.

RECOMMENDATIONS

As one who has done but little of the detailed work, the chairman desires to record for the appreciation of the House of Delegates the devoted and faithful service of the other members of the committee who have given unstintedly of their time and effort in carrying out your instructions. The corps area chairmen and the headquarters personnel have not regarded any sacrifice too great in promoting the committee's work, such sacrifice demanding not only intense application and tedious effort but appreciable donation of time from home and practice. The committee has spent many thousands of dollars of the Association's funds, and its members have devoted many hours of their time in accomplishing the survey, the like of which has not been done before. Since the objectives sought in the request of the Surgeon General of the Army have been attained as far as lies within the power of the committee, the Committee on Medical Preparedness begs to express to you its appreciation for the opportunity of service which you have given it and requests that it be now discharged.

Since the national preparedness program has now been superseded by actual participation in war, the Committee on Medical Preparedness recommends to the House of Delegates the appointment of a committee for the duration of the war to be known as the "Committee on Participation of the Medical Profession in the War Effort" composed of five members appointed by the Speaker of the House with the President, President-Elect, Chairman of the Board of Trustees, Secretary of the Association and the Editor of THE JOURNAL as ex officio members. The Committee on Medical Preparedness was appointed to accomplish a specific requested purpose: the proposed Committee on Participation of the Medical Profession in the War Effort in keeping close touch with all policies affecting the quality and efficiency of medical service both to the armed forces and to the civilian population would feel free to express comment and criticism of policies relating to the participation of medicine in the war effort. Without authority to act it could advise, expressing the view of the medical profession on such proposals as are made having a direct bearing on the principles which our Association regards as fundamental in providing good medical service.

Respectfully submitted.

IRVIN ABELL, Chairman.

Members of committee:

ROY W. FOUTS.
JOHN H. O'SHEA.
STANLEY H. OSBORN.
JAMES E. PAULLIN.
WALTER G. PHIPPEN.
FRED W. RANKIN.
HARVEY B. STONE.
SAM E. THOMPSON.
and ex officio
FRANK H. LAHEY.
ARTHUR W. BOOTH.
OLIN WEST.
MORRIS FISHBEIN.

Report of Committee to Study Problems of Motor Vehicle Accidents

Dr. Burt R. Shurly, Section on Laryngology, Otology and Rhinology, presented the following report, which was referred to the Reference Committee on Hygiene and Public Health:

TRENDS IN MOTOR VEHICLE ACCIDENTS

In a previous report published in May 1939 the members of the committee noted the decrease throughout the country in motor vehicle accidents since the peak of 1937 and stated that the members of the committee "are convinced that the improvement is due chiefly to education and traffic law enforcement." Unfortunately, this decrease in accidents has not held. Motor vehicle accidents are again increasing, and in 1941 they reached a new and all time high with 40,000 persons losing their lives from this cause alone. Are our law enforcement officers becoming more lax, and has the educational program been allowed to lag? The members of the committee do not feel that this is the cause but believe that it is due to the increase in travel and to the increasing national defense activity since the invasion of France.

In 1942 and until the end of the present war, many cars will leave the road because of the shortage of tires and of gasoline. There will be fewer drivers, and speeds will be lower so as to conserve these essential materials. If these were the only factors, we might expect a large reduction in traffic accidents and deaths throughout the country.

Unfortunately, there are other factors which may lead to further increases in traffic deaths in areas of increasing defense activity. Defense workers must continue to go to and from their jobs, and in many instances this will require continued use of motor vehicles. Motorists will be driving on poorer tires, new cars will not be available, and every "jallopy" that can navigate may be put to use. More workers will ride in each car, thus increasing the average number of workers that will be injured in each accident. In addition, the general mental and nervous strain which is always present in a time of national emergency and is especially prevalent in war industry areas may be reflected in the driving habits of the workers. It is unfortunate that traffic accidents among defense workers are all too frequent, occurring particularly among the young, inexperienced drivers or the older "rusty" drivers and the drinking driver and pedestrian.

What responsibility for the driving habits of the general public falls on the medical man? Probably far more than is evident at first glance. As more of the younger and able bodied men enter the armed forces, more civilian duties will

be taken over by older, less alert men and women. Many of these duties require driving cars. The medical profession can aid by keeping the public cognizant of these facts and by reiterating the need for maintaining high physical standards in our civilian population.

TRANSITORY AND PERMANENT DEFICIENCIES

The public in general, and law enforcement officers in particular, should be impressed with the fact that minimal physical standards which may permit an individual to obtain a driver's license do not constitute ideal standards. As stated in our previous report, "in licensing the public, only the *certainly unfit* may be rejected and all questionable applicants must be given the benefit of the doubt and accepted." These individuals with minor physical defects should, however, be impressed with the fact that driving safely will be more difficult for them. This also can be done by the physician in his private practice, and in this respect the committee wishes to reemphasize the recommendation made in its previous report regarding transitory deficiencies.

Regarding permanent conditions which may interfere with driving ability, we wish to comment particularly on two points. First of all, deafness is less a traffic hazard than is ordinarily believed. Most persons with this debility are able to compensate for their deficient hearing, and there is no record of a greater accident rate among the deaf than among the normal population. However, it is recommended that people with defective hearing equip their cars with outside rear-view mirrors so as to increase their ability to detect the presence of cars behind them.

The presence of epilepsy should be sufficient reason for denying a driver's license. For practical purposes any person having a permanent condition which may cause temporary unconsciousness should be included in this category. When applying for a driver's license, it should be mandatory to report all deficiencies which might interfere with driving ability. It is also important that the individual applying for a driver's license be properly identified, since many people who feel they may be physically disqualified have furnished a substitute for the examination.

ALCOHOLIC INTOXICATION

The role of alcohol as a factor in traffic accidents has continued to receive widespread attention. An ominous trend has been observed, namely that fatal traffic accidents involving reported drinking by drivers increased 27 per cent in 1941, whereas the increase in other fatal traffic accidents was only 17 per cent. The fact that a large proportion of the alcohol accidents occur among workers in war industries makes this a serious problem in national defense.

Physicians can aid enforcement officers in the control of drinking drivers by making examinations of drivers suspected of being under the influence of alcohol and seeing that the cases are prosecuted in a scientific manner rather than by relying on hit or miss lay opinion. To this end, chemical tests of body fluids or breath should be used in addition to clinical examinations in determining the degree of intoxication. The use of chemical tests for confirming or disproving alcoholic influence should increase the prestige of expert medical testimony.

Clinical pathologists are particularly well suited to perform the chemical tests and to present competent testimony in court. Any physician, however, can supervise the taking of the specimens and can handle testimony in court if he will thoroughly acquaint himself with chemical, medical and legal phases of such tests. The committee recommends that any physician who is to testify in such cases fully acquaint himself with the work done by the National Safety Council in this regard, and that he secure from the Council copies of reports [1] describing standard procedures for making clinical examinations and for avoiding legal pitfalls in taking specimens, making the chemical analyses and presenting testimony in court. Further, physicians personally should acquaint themselves with the chemical principles of such tests before testifying in court.

1. Reports of the Council's Committee on Tests for Intoxication can be obtained by writing the National Safety Council, Chicago.

Much progress has been made in the acceptance of chemical tests for intoxication by the legal profession. Four states, Indiana, Maine, New York and Oregon, now have legislation dealing with the use of evidence obtained through chemical tests for intoxication. In addition, evidence obtained through chemical tests has been used in drunken driving cases in more than twenty-eight other states during the past year.

The committee reiterates its previous recommendations that the percentage of alcohol in the blood is a reliable index of the degree of intoxication, especially when considered along with external symptoms of intoxication. For those who do not recall the previous recommendations of this committee, we wish to repeat briefly the chemical standards for the legal interpretation of "under the influence of alcohol" in terms of the percentage of alcohol in the blood or its equivalent in other body materials:

1. Below 0.5 per cent alcohol in the blood: no influence by alcohol within the meaning of the law;

2. Between 0.05 and 0.15 per cent, a liberal, wide zone: alcoholic influence usually is present, but courts of law are advised to consider the behavior of the individual and circumstances leading to the arrest in making their decision;

3. 0.15 per cent: definite evidence of "under the influence," since every individual with this concentration would have lost to a measurable extent some of that clearness of intellect and control of himself that he would normally possess. These standards have proved themselves to be fair and practical. The zone below 0.05 per cent vindicates the nondrinking or temperate driver, the wide middle zone considers tolerance and idiosyncrasy, and the highest zone indicates alcoholic influence regardless of unusual tolerance. The chemical tests can be performed with remarkable accuracy and are the best means of proving alcoholic influence. It is necessary, however, that care be used in making the tests and that those who run the analyses have sufficient experience and are able to show that they can perform the tests accurately.

Claims have been made that the results of chemical tests should be interpreted differently in those states where the courts interpret the phrase "under the influence" to mean that the person is not able to drive in the manner of the "ordinarily prudent or cautious person." Such claims state that some skilful drivers with a blood alcohol concentration of 0.15 per cent or more may still be better drivers than the poorest drivers who have managed to pass the tests for a driver's license, although admitting that even these "superior" drivers have been definitely affected by the alcohol.

This committee recognizes the differences in legal interpretations of the phrase "under the influence" but points out that the "safest" driver is not necessarily the most "skilful" in performing skill tests. Results of brake reaction time tests, for example, reveal that persons with the fastest reaction time in applying brakes do not necessarily have the best accident records. This may be due to their driving a little faster and otherwise adjusting their driving habits to their superior physical ability, so that they have no greater margins of safety than other drivers who adjust their driving habits to their physical limitations. Thus the committee believes that a superior driver who lowers his ability by the use of alcohol is a hazard on the road, even though he may still be able to perform skill tests as well as the less skilful sober driver. He has lost some of his good judgment and superior ability to react to danger yet usually will not adjust his driving habits in accordance. Driving a car is such a hazardous occupation, even under the best of circumstances, that no driver should have the legal or moral right to lower his driving ability deliberately to any extent. One might as well argue that persons with superior driving skill should be permitted to ignore speed limits, stop signs and traffic signals.

There is need for a more uniform interpretation of the phrase "under the influence of intoxicating liquor" so as to avoid controversy in the interpretation of chemical tests. The committee wishes to urge again that all states consider the definition of the phrase given by the Arizona Supreme Court,[2] which con-

2. Steffani v. State (Ariz.), 42 Pac. (2d) 615.

siders an individual under the influence of intoxicating liquor when, owing to imbibing such liquor, he has lost to any extent some of that clearness of intellect and control of himself that he would otherwise possess. This is preferable to comparing the manner of driving to that of "an ordinarily prudent and cautious person." In those states in which the definition is based on the driving ability of "an ordinarily prudent and cautious person," the committee urges that courts consider the difference between a "prudent" person and a "skilful" person. It is well known that alcohol affects judgment before affecting ability to perform skill tests, and thus some persons may still be able to perform certain skill tests satisfactorily and yet have their judgment affected so that they could not be considered "prudent" drivers.

FIRST AID

The committee recommends that every physician carry in his car at all times a first aid kit so equipped that he may handle efficiently the immediate treatment which may be needed in traffic accidents. This kit will also be of value in handling casualties which may arise from "total war." A physician is supposed to be ready and able to handle emergencies; and it is of little value to know what must be done and to be forced to state that the wherewithal is at the nearest hospital 20 miles away. The first aid kit should include sterile dressings, bandages, disinfectants, tourniquets and splints which are not normally carried in the medical kit. The American Red Cross furnishes, at cost, kits of various sizes containing replaceable units.

The doctor must not assume that his course in medicine alone has been sufficient to enable him properly to teach first aid, or even to administer it with maximum efficiency. First aid methods constantly are being improved and it is important that each physician become acquainted with the present "best seller," the Red Cross First Aid Textbook. Such information will minimize the criticism of Red Cross first aid methods by physicians who have not taken the time to discover that the procedures advised in the manual have been approved by many organizations including the American College of Surgeons.

In the present emergency, thousands of laymen are being trained in first aid. Such training is highly recommended, but the committee feels that such instruction should have the supervision and guidance of the medical profession. Many physicians are cooperating with lay instructors in teaching Red Cross first aid courses. The committee feels that such cooperation should be adopted more generally and that the various state and county societies should, through their members, act in an advisory or teaching capacity for all such courses whenever possible. A little knowledge may be a very dangerous thing unless properly guided and controlled.

The first aid program in Milwaukee County might be mentioned because it is the only community in which all first aid courses are taught under the supervision of physicians assigned by the county medical society. The physician who criticizes the lay first aider for the manner in which an accident victim is brought to him should realize that it is the physician's responsibility to instruct the first aider properly. As a matter of fact the physician and the victim often have reason to be grateful for properly administered first aid. There is no doubt that first aid is an increasingly important factor in preventing accidents, saving lives and minimizing disability.

"The American Red Cross reports a very lively interest on the part of physicians everywhere in equipping themselves adequately to teach emergency first aid to lay groups and on the lay level. For instance, in the city of Washington alone within the past four months more than three hundred medical doctors have taken first aid refresher courses in order that they might be fully prepared to handle their own classes. This is only an example of the same understanding active cooperation by physicians throughout the entire country and is especially gratifying when one remembers that Red Cross first aid stems directly from the best experiences of the medical profession. All in all, it does indicate a professional support and a program soundness which combine in making an asset of tremendous importance in these times of total war." [3]

3. Personal communication from Richard W. Thrush, National Assistant Director, First Aid and Accident Prevention of American Red Cross.

DRIVING BY PHYSICIANS

Finally, the committee feels the physician should consider himself as a part of the problem of controlling motor vehicle accidents. Many physicians will be needed in the Army and Navy. This will increase the load of those remaining in civilian life. It will mean longer hours, more house calls, greater preoccupation and consequently increased fatigue. All these factors contribute as driving hazards. When you are at the wheel of your car, forget Mrs. Smith's impending coronary thrombosis and concentrate your faculties on the stop light ahead or the child on the sidewalk who may dart suddenly into the middle of the road. Consider also the fact that it may be necessary for the physician to drive during blackouts. In England during the early air raids more people were injured in traffic during blackouts than were hurt by enemy bombs. Don't drive at such times unless it is absolutely necessary. When it is imperative, exercise utmost care and follow the instructions of the local defense council.

The criticism has been made that physicians take advantage of the privileges granted them by law enforcement officers and make a habit of disregarding traffic regulations. This privilege should never be abused. As physicians it behooves us all to aid wherever possible in decreasing a mode of slaughter which, during the last nineteen months, killed more people than the number of soldiers lost during the nineteen months of combat on the battlefields of Europe.

Respectfully submitted.

HERMAN A. HEISE, Chairman.
BURT R. SHURLY.
THOMAS A. MCGOLDRICK.

NEW BUSINESS

Resolution on Preserving Progressive Technics in Medical Practice

Dr. E. H. Cary, Texas, presented the following resolution, which was first referred to the Reference Committee on Military Preparedness and later referred by the Speaker to the Reference Committee on Miscellaneous Business:

WHEREAS, There is a unanimous acceptance by physicians of the United States that the seriousness and scope of the existing worldwide conflict demands the unreserved and unqualified devotion and sacrifice to the ultimate limit of individual ability and capacity; and

WHEREAS, An all professional agency, the Procurement and Assignment Service, has been established officially and entrusted with the all important task of providing professional personnel to meet civilian and military health and medical requirements for the period of the emergency; and

WHEREAS, It is considered that the assigning of this vast and vital responsibility to this strictly professional agency represents an unequaled tribute to and an unparalleled achievement of the medical profession; and

WHEREAS, The Procurement and Assignment Service functions as a department of government and embodies within its various corps area and state committees a predominant majority of the trustees and officers of national and state medical societies; and

WHEREAS, There is the prospect of the need for forty thousand, possibly fifty thousand, qualified physicians to serve directly with military forces; and

WHEREAS, The conditions under which physicians have been able to function in the United States provide the factor most nearly responsible for the relatively enviable position which medicine now occupies and which is enabling organized medicine to provide the personnel and professional competence that represents an essential, even vital, contribution to the war effort; and

WHEREAS, It is a chief responsibility of the profession to do its utmost to continue progressive technics in medical service which will provide opportunity for those physicians who are called to military service to reenter private practice under conditions which will insure continued progress and maximum effectiveness in civilian service; therefore be it

Resolved, That we, the House of Delegates of the American Medical Association, place ourselves officially on record as recognizing our responsibility for making the utmost effort to preserve the elements of independence and freedom of action that will make possible the easy reentry of physicians to civilian practice. To this end we recommend that a definite part of each program of every component member medical society be devoted to a reconsideration of the traditions, the standards, the freedoms, the effects of the absence of restraints and outside control which have contributed so materially to American medicine's unequaled progress and vast achievements.

Resolution on Control of Venereal Disease

Dr. George W. Kosmak, New York, presented the following resolution, which was referred to the Reference Committee on Hygiene and Public Health:

WHEREAS, Published reports indicate an increasing prevalence of venereal disease in the armed forces and defense workers of this nation; and

WHEREAS, Commercialized prostitution constitutes an outstanding factor in the dissemination of these diseases and requires an intensified campaign against their elimination; therefore be it

Resolved, That the House of Delegates of the American Medical Association takes the following stand: (1) that the control of venereal disease requires elimination of commercialized prostitution, (2) that medical inspection of prostitutes is untrustworthy and inefficient, gives a false sense of security and fails to prevent the spread of infection, and (3) that prostitution is unlawful, and physicians who knowingly examine prostitutes for the purpose of providing them with medical certificates to be used in soliciting are participating in an illegal activity and are violating the principles of accepted professional ethics.

Resolutions Requesting Change in By-Laws Limiting Time for Introduction of New Business in House of Delegates

Dr. J. C. Sargent, on instruction of the State Medical Society of Wisconsin, presented the following resolutions, which were referred to the Reference Committee on Miscellaneous Business, except that portion of the resolutions containing an actual amendment to the By-Laws, which was referred to the Reference Committee on Amendments to the Constitution and By-Laws:

WHEREAS, The business of the House of Delegates of the American Medical Association, except that placed before it by the Board of Trustees and the several sections, consists almost entirely of resolutions introduced by delegates on instruction of their constituent state societies; and

WHEREAS, These resolutions commonly are drawn up and adopted by the constituent state societies months in advance of the annual session of the House of Delegates; and

WHEREAS, It would be of great help to each delegate in determining his attitude on all proposed business if he was apprised in advance of the nature of that business and thus given the opportunity of sounding out the will of the membership that he is elected to represent; be it hereby

Resolved, That in the future all new business to be brought before the House of Delegates of the American Medical Association, except it be business introduced by the Board of Trustees or by sections of the Association then in session, shall be filed with the Secretary and by him in turn forwarded to all state secretaries and to all delegates well in advance of each session; and be it further

Resolved, That to implement this the By-Laws of the American Medical Association shall be changed in chapter II, section 3, to read:

Chapter II, Section 3. Limit of Time for Introduction of New Business. Unanimous consent shall be required for the introduction of new business *not filed in proper form with the Secretary of the Association** sixty days before the annual session of the House of Delegates, except when presented by the Board of Trustees, the officers of the sections or the sections. All new business so presented shall require a three-fourths affirmative vote for adoption.

* The *italicized* words represent the proposed change and are intended to replace the words "at the last meeting of."

Resolution on Tribute to Physicians and Surgeons of Honolulu County Medical Society

Dr. D. S. Towne, New York, presented the following resolution, which was referred to the Reference Committee on Miscellaneous Business:

WHEREAS, The civilian physicians and surgeons of the Honolulu County Medical Society rendered a great service during the Pearl Harbor attack on Dec. 7, 1941; and

WHEREAS, At the outset of the emergency they promptly responded to a call for aid from the Tripler General Hospital of the Army and by their surgical skill and unremitting efforts rendered great aid to the wounded; and

WHEREAS, By this service a new chapter was added to the successful treatment of war casualties and certain surgical procedures were established which will result in the saving of many lives and limbs from war injuries; and

WHEREAS, Their service was the more outstanding because only a few of them had ever been under fire, and by their courage and stamina they did much to aid the morale of the wounded, of the hospital personnel and of the civilian population; and

WHEREAS, The services of the physicians and surgeons were recognized in the official Roberts Report of the Attack by the statement that 92 per cent of the medical profession were available on that eventful historic occasion; and

WHEREAS, The Medical Society of the State of New York has gone on record in commendation; therefore be it

Resolved, That the American Medical Association recognizes the response of the civilian physicians and surgeons of the Honolulu County Medical Society to emergency duty and renders a tribute to their demonstration of the traditional willingness of our profession to act promptly and skilfully in all national emergencies.

Resolutions on Hospital Corporations Engaging in Practice of Medicine

Dr. E. H. Skinner, Section on Radiology, presented the following resolutions, which were referred to the Reference Committee on Miscellaneous Business:

WHEREAS, The House of Delegates approved a resolution, introduced by Dr. Harry H. Wilson at the 1941 session, instructing "the Board of Trustees of the American Medical Association . . . to confer with similar committees representing the American Hospital Association and the Catholic Hospital Association of the United States, the conjoint committees to study and submit reports to their respective national bodies, in which would be outlined platforms or principles designed to clarify the relation of medical services that may be offered in prepayment hospitalization and similar plans, the same to be in line with the basic principles laid down in the past by the House of Delegates and other authorities of the American Medical Association . . ."; and

WHEREAS, The Board of Trustees was requested in the same resolution to "proceed to these matters as expeditiously as may be possible"; and

WHEREAS, Evidence of continued encroachment of hospitals into the practice of medicine are manifest in numerous group hospitalization plans which offer certain medical services on a service basis as a part of hospital care and in plans adopted by numerous hospitals which include certain medical services in an "all inclusive" per diem rate for hospital care; now therefore be it

Resolved, That the House of Delegates reaffirms the principles enunciated in official resolutions over a period of many years opposing the practice of medicine by corporations or the interjection of a third party into the personal relationship and financial transaction between doctors and patients; and be it further

Resolved, That hospital corporations should not be permitted to engage in the practice of medicine through the medium of employed physicians or to enter into contracts with any individual, group or agency whereby the hospital agrees to furnish any medical services; and be it further

Resolved, That, to the end that hospitals be discouraged from offering the services of licensed physicians to patients on a contract or service basis, all fees for medical services rendered in hospitals should be collected by or on the account of the physician rendering such service, and all physicians concerned in the care of a patient should give or send directly to the patient or other responsible party a statement showing charges for professional services rendered; provided, however, that an exception to the foregoing principle may be made in the case of a formally organized partnership of physicians which acts in the capacity of an individual; and be it further

Resolved, That the definitions of medical service and hospital service as applied to the principles stated herein shall be consistent with those applied in previous declarations of the House of Delegates in which medical services are construed as the services rendered by licensed practitioners of medicine, and hospital service as limited to hospital accommodations such as bed, operation room, medicines, surgical dressings and general nursing care; and be it further

Resolved, That the Board of Trustees be urged to proceed to the clarification of these problems as requested by the House of Delegates at its last annual session.

Resolution on Medical Service Plans

Dr. Charles E. Mongan, Massachusetts, presented the following resolution, which was referred to the Reference Committee on Legislation and Public Relations:

WHEREAS, The House of Delegates of the American Medical Association in special session in 1935 stated that "it reaffirms also its encouragement to local medical organizations to establish plans for the provision of adequate medical service for all of the people, adjusted to present economic conditions, by voluntary budgeting"; and

WHEREAS, The Delegates amplified this statement in special session Sept. 16 and 17, 1938 with the restrictive remark that "In addition to insurance for hospitalization your committee believes it is practicable to develop cash indemnity insurance plans to cover, in whole or in part, the costs of emergency or prolonged illness"; and

WHEREAS, Pursuant to this obligation thus imposed on state and county medical societies they have so acted as to warrant the report that "By the summer of 1941 there were twenty state medical societies that had taken some steps toward the introduction of a medical *service plan to operate over the entire* stated" (1941 edition Organized Payments for Medical Services), and since nearly the entirety of effectively organized and planned service schemes have utilized the principle of medical service contracts (California, Michigan, Buffalo, Utica, North Carolina, Washington, Oregon, Pennsylvania, New Jersey, Massachusetts and others); and

WHEREAS, These major experimenting groups have not found wholly valid or practical for effectively aiding the lower income groups such restricting and restrictive statements relative to contracts coming from the House of Delegates (1938) as "Your committee unanimously concurs in the suggestion and recommends that the American Medical Association adopt the principle that in any plan or arrangement for the provision of medical services the benefits shall be paid in cash directly to the individual member," and such statements as that from the revised

publication 1941 Organized Payments for Medical Services, page 21, that "The attitude of the American Medical Association toward methods of payment of medical bills has been clearly defined. The position that benefits should be paid to the patients in cash in the same manner as premiums are collected from them . . . is plainly stated"; and

WHEREAS, The empirical findings of the major experimenting groups that a medical service contract best serves the end of a more adequate distribution of needed medical care in a manner which effectually protects the lower income groups against the mounting costs of medical care and is directly in accord with the realistic attitude of the Massachusetts commissioner of insurance that the "capital" sustaining such plans with payments on the unit basis is not cash but the physician's service; and

WHEREAS, The statement of the House of Delegates Sept. 16 and 17, 1938 that "Your committee recognizes the soundness of the principles of the workmen's compensation laws" implies acceptance of the important compensation principle of arranging the delivery of complete service to the patient without additional charge by the doctor, and with payment of the physician from insurance funds, all of which is the essence of a medical service contract; be it therefore

Resolved, That the state and county units of the American Medical Association in undertaking medical service plans at the behest of the parent organization will have their hand supported if medical service contracts as well as cash indemnity contracts are given equally frank direct approval by the House of Delegates.

Resolution on Aid to Our Government

Dr. Wells P. Eagleton, on behalf of the Medical Society of New Jersey, presented the following resolution, which was referred to the Reference Committee on Legislation and Public Relations:

Resolved, That the Medical Society of New Jersey, through and with the American Medical Association, pledges its utmost and wholehearted support to the President and government of the United States in the successful prosecution of the war and the establishment of a new and better order for all peoples.

The Medical Society of New Jersey is pleased to congratulate the American Medical Association for the aid it has given our government in the enlistment of physicians in our armed forces and for Civilian Defense, as expressed in a letter by Assistant Secretary of War Patterson, as recently published in THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

Resolution on Adequate Medical Care

Dr. Wells P. Eagleton, for the Medical Society of New Jersey, presented the following resolution, which was also referred to the Reference Committee on Legislation and Public Relations:

WHEREAS, The Medical Society of New Jersey recognizes it is essential that adequate medical care be available to all our people; and

WHEREAS, The Medical Society of New Jersey recognizes that the importance of this problem will loom larger during the privations of the days to come, although the emphasis may wane with the distraction necessitated by war efforts; and

WHEREAS, The Medical Society of New Jersey believes that the organized medical profession should take the initiative in all matters pertaining to the health of our people; and

WHEREAS, The successful operation of the Emergency Relief Administration during 1933, 1934 and 1935 and the organization of the Medical Service Administration by the Medical Society of New Jersey may be a basis for, and contribute to, the formulation of a practical means of meeting this very difficult problem, so that adequate medical care may be available to those of our people who cannot provide it for themselves; therefore be it

Resolved, That we believe and request that an adequate medical care plan be formulated, without delay, for all states, by joint action and agreement between representatives of government and the American Medical Association, so that adequate care shall be available to those who wish to take advantage of it.

Resolution on Women Physicians Obtaining Commissions in Medical Reserve Corps of United States Army and Navy

Dr. Emily D. Barringer, for the Medical Society of the State of New York, presented the following resolution, which was referred to the Reference Committee on Military Preparedness:

WHEREAS, During the past winter women physicians have been denied commissions in the Medical Reserve Corps of the United States Army because of their sex and in spite of outstanding personal and professional qualifications, as for instance in the case of a skilled anesthetist attached to a base hospital which was ordered into active service, and in this case the colonel in charge and the chief surgeon highly endorsed and desired that this woman be a member of the staff of this base hospital; and

WHEREAS, During this past winter two American women physicians have received commissions in the Royal Army Medical Corps of the British Army, one as a major and the other as a lieutenant, and both have been assigned to military hospitals; and

WHEREAS, The women physicians of the American Medical Association are a minority group, who however pay dues and take part in the activities of the Association and turn to the Association for help in their problems of medical opportunities; and

WHEREAS, There is no existing ruling that women are ineligible to the Medical Reserve Corps of the United States Army, while there is an existing ruling in the Navy, which could be removed by the proper authorities; and

WHEREAS, At the last meeting of the house of delegates of the Medical Society of the State of New York the house went unanimously on record as approving that women physicians be admitted to the Medical Reserve Corps of the United States Army and Navy, and formally requested the American Medical Association to endorse that action which was not accomplished; therefore be it

Resolved, That the House of Delegates of the American Medical Association aid one of its minority groups by endorsing and aiding women physicians in obtaining commissions in the Medical Reserve Corps of the United States Army and Navy.

Resolutions on Standards for Percentage Determination of Hearing Loss

Dr. Burt R. Shurly, Section on Laryngology, Otology and Rhinology, presented the following resolutions, which were referred to the Reference Committee on Miscellaneous Business:

Resolved, That the Section on Laryngology, Otology and Rhinology has carefully considered the recommendation of the Council on Physical Therapy respecting standards for the percentage determination of hearing loss; therefore be it

Resolved, That the Section on Laryngology, Otology and Rhinology requests that the House of Delegates approve the said recommendation.

Request That American Medical Association Inspect and Approve or Disapprove Present and Future Schools for Training of Medical Record Librarians

Dr. W. A. Coventry, Minnesota, presented the following request, which was referred to the Reference Committee on Medical Education:

Owing to the demand for trained medical record librarians, the American Association of Medical Record Librarians realizes the need for specially organized courses in this field. Ten such schools approved by the Association have been established. These approved schools can by no means supply a sufficient number of graduate record librarians. The needs are so great that other schools must be approved.

It is of deepest concern to us, however, that this increase in schools shall not lower the educational standards which the American Association of Medical Record Librarians requires. Our Educational Board enjoys the privilege of having among its members a representative of the American College of Surgeons, the American Hospital Association and the American Medical Association. The contribution made by these experienced men has been of great value. We now wish to go a step further. We earnestly desire that the American Medical Association inspect all present schools and all future schools for training of medical record librarians and after inspection either approve or disapprove the schools.

Furthermore, we ask that schools for medical record librarians approved in this manner be listed in THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

Resolution Requesting Approval of Principles of American College of Apothecaries

Dr. Joseph F. Smith, Wisconsin, presented the following resolution, which was referred to the Reference Committee on Miscellaneous Business:

WHEREAS, The American College of Apothecaries, a national, nonprofit organization founded for the promotion of public health by education, distribution of pharmaceutic information and encouraging interest in prescribing to lessen the danger of self medication; and

WHEREAS, This organization through its policies and objectives promotes a better relationship between medicine and pharmacy; and

WHEREAS, It is an affiliate of the American Pharmaceutical Association and its members must hold membership therein; and

WHEREAS, Its membership is limited to professional pharmacists, hospital pharmacists and faculty members of schools of pharmacy; and

WHEREAS, Each pharmacy owned and operated by a fellow of the American College of Apothecaries must comply with the following requirements:

(*a*) Each pharmacy exterior or window shall not display any signs of cigarets, cigars, tobacco, liquor, beverages, food or ice cream. The pharmacy must not display either inside, outside or in the windows of the pharmacy any advertising material which detracts from the professional appearance of the pharmacy or suggests self medication.

(*b*) The general appearance, both exterior and interior, of the pharmacy shall be one of cleanliness and order. The pharmacy shall be such as to make it predominantly apparent to the public that it is a pharmacy. It shall be well lighted and ventilated, and the prescription laboratory shall have a professional atmosphere. There shall be no lotteries or gambling devices on the premises.

(*c*) There shall be a registered pharmacist on duty at all times that the pharmacy is open for business; and

WHEREAS, Serving of meals and lunches, and the sale of any product that might reflect on pharmacy as a profession is prohibited; therefore be it

Resolved, That the House of Delegates of the American Medical Association go on record approving the principles of this organization, which is sincere in the endeavors: (1) to advance the standards of pharmacy, (2) to secure better cooperation between physician and patient, (3) to stimulate greater interest in public health and welfare and (4) to offer a better pharmaceutic service to physician and patient.

Presentation and Address of Dr. T. C. Routley

Dr. Olin West, Secretary, introduced to the House Dr. T. C. Routley, fraternal delegate from the Canadian Medical Association, who addressed the House as follows:

Mr. Speaker, Dr. West, Members of the House of Delegates of the American Medical Association: Once again it is my very happy privilege to bring you the fraternal greetings of the Canadian Medical Association.

Nineteen years have elapsed since this great honor was accorded me, as I have told you on other occasions. If I keep this up for two more years, I am going to apply to you for a right of way over this highway, which cannot be blocked after twenty-one years—at least that is so in my country.

Unfortunately, as Dr. West has told you, my own meeting begins two days hence, and I must be on my way. We are hoping that many of your members of the western states who have not found it convenient to come to your meeting may come over to us at Jasper, where I can assure you a very hearty and cordial welcome awaits them.

On the last two occasions on which I have appeared before you I have been asked a number of times how long I thought England could hold out against the enemy. That reminds me of a story. It appears that at least once a year Sandy and Angus had a game of golf. On this occasion it was a cold day when they went out to play. It seemed to necessitate a little bit of warming up in the clubhouse, so they had a nip from the bottle. On the first tee, while they waited to drive off, they thought it was an occasion for another little nip from the bottle. On the first green they each had a five and of course that was an occasion for celebration, so they had another little nip from the bottle. Thus it went from tee to green and green to tee until they reached the sixteenth hole. Finally Angus, turning to Sandy, said "Sandy, how do we stand?"

"Well, I don't know," he said, "It's a miracle."

It may be, ladies and gentlemen, that when England was standing alone she was standing because of a miracle, perhaps because of a Divine Providence, who knows. But the fact remains that she stood, thank God!

I do recall on that memorable meeting between Mr. Churchill and the prime minister of France, when France was just on the verge of falling, the prime minister of France said to Mr. Churchill "Now what are you going to do?"

"Well," he said, "we will fight on; we will fight on in the streets, we will fight on in our homes, we will fight on until there is nobody left. But," he said, "there is one thing I can assure you. No matter what happens in England, England will go on forever and forever and forever and forever."

Mr. Speaker, since I last had the honor of coming to you, great changes have taken place. We no longer think in terms of miracles. We can see a glimpse of the future, and, no matter how long the struggle may be, medicine in this great North American continent, you and we, are going to play our part to the end of the struggle, and I am confident, as I am sure that you are, that your way of life and our way of life will survive and go on forever and forever and forever.

Resolutions on Elimination of Requirement of Certification of Checks for Purchase of Special Tax Stamps in Connection with Dispensing of Opium

Dr. James R. Reuling, New York, presented the following resolutions from the Medical Society of the State of New York, which were referred to the Reference Committee on Miscellaneous Business:

WHEREAS, The physicians and surgeons who dispense or prescribe opium or coca leaves or any compound, manufacture, salt, derivative or preparation thereof are required by federal law and regulations annually to purchase a special tax stamp for $1; and

WHEREAS, When payment of such dollar is made by check it is required that such check be certified by the bank of payment; and

WHEREAS, The Treasury Department of the United States of America accepts checks for larger amounts without requiring certification; and

WHEREAS, The Medical Society of the State of New York has protested against the requirement that checks in payment of these special tax stamps be certified by the bank of payment; and

WHEREAS, Members of dentist, veterinary, pharmacist, manufacturing chemist and banker organizations are also affected by the unnecessary labor of certification of small checks; therefore be it

Resolved, That the American Medical Association take emphatic and persistent steps for the elimination of the requirement of the certification of checks for purchase of special tax stamps in connection with the dispensing of opium or coca leaves or any compound, manufacture, salt, derivative or preparation thereof; and be it further

Resolved, That copies of this resolution be sent to important national dentist, veterinary, pharmacist, manufacturing chemist and banker organizations.

Resolutions on Approval of Activities of National Physicians' Committee for the Extension of Medical Service

Dr. Thomas A. McGoldrick, New York, presented the following resolutions, which were referred to the Reference Committee on Legislation and Public Relations:

WHEREAS, The physicians of the United States, through the American Medical Association, unselfishly have devoted time, energy and continuously greater ability to building an organizational structure truly nationwide in scope, serving every town, village and hamlet in this country and devoted to the vital task of providing a more effective and a more generally available medical service than is provided anywhere else in the world; and

WHEREAS, These efforts, over a period of nearly one hundred years, have developed American medicine to the point of a general recognition of its worldwide leadership; and

WHEREAS, This unparalleled growth and this unusual effectiveness are the results of the high level of educational requirements, the high standard of ethics that has been maintained and the continuous safeguarding of the relationship between the physician and the patient; and

WHEREAS, We are now passing through a period of worldwide revolutionary change in social, economic and philosophic concepts; and the general public has been and is subjected to a vast educational propaganda, some of which tends to discredit the American doctor and to destroy confidence in the effectiveness of American medicine and in our system of distributing medical care; and

WHEREAS, Preservation of the vital principles responsible for medicine's past progress, its present effectiveness and its ability to serve the public most advantageously make it essential that citizens understand the basic facts in connection with American medicine's methods, growth, achievements, the factors responsible for its superiority and the extent to which the people have been the beneficiaries of the profession's intensive and constructive efforts; therefore be it

Resolved, That we register our approval of the activities of the National Physicians' Committee for the Extension of Medical Service, commend the board of trustees and the management of that institution for the efforts they have made to enlighten the general public in connection with American medicine's methods, progress and achievements and in pointing out that the public has a vital interest in the final result; and be it further

Resolved, That it be declared the policy of this House of Delegates to encourage this effort and similar efforts with identical purposes.

Resolution Requesting Change in Social Security Act

Dr. Walter W. Mott, New York, presented by title a resolution requesting change in the Social Security Act, which was referred to the Reference Committee on Executive Session.

Presentation of Men in House Who Had Not Served Previously

Dr. H. H. Shoulders, Speaker, called on associates of each delegate who had not previously served in the House to present such new members. The following new delegates and visitors were presented: Dr. F. H. Douglass, Washington; Dr. John M. Emmet, Virginia; Dr. Warren L. Allee, Missouri; Dr. John T. Donovan, New York; Dr. Marion C. Pruitt, Georgia; Dr. Harry V. Paryzek, Ohio; Dr. George A. Woodhouse, Ohio; Dr. A. H. Stewart, Pennsylvania; Dr. Dwight L. Wilbur, California; Dr. William A. Mulherin, Georgia; Dr. B. E. Pickett, Texas, and Dr. Henry N. Tihen, the president of the Kansas Medical Society.

The House recessed at 1:35 p. m. to meet again at 9:30 a. m., Tuesday, June 9.

(To be continued)

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION AND PUBLIC HEALTH.)

CALIFORNIA

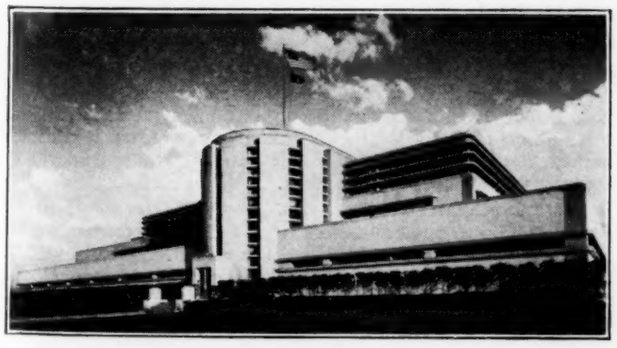
Annual Meeting of Urologists.—The twentieth annual session of the Western Section of the American Urological Association will be held at Del Monte, June 22-24, under the presidency of Dr. Albert M. Meads, Oakland. Among the speakers will be:

Dr. Laurence L. Howard, Great Falls, Mont., Double Kidneys and Double Ureters with Ectopic Ending of One Ureter.
Drs. Donald A. Charnock and William S. Kiskadden, Los Angeles, Hypospadias.
Dr. Joseph F. McCarthy, New York, A Consideration of Essential and Accessory Equipment for Instrumental, Operative and Diagnostic Urology.
Dr. Herbert M. Evans, Berkeley, Gonadotropic Hormones—Pituitary and Nonpituitary.
Dr. Miles Griffin, Oakland, The Case Against Transurethral Prostatic Resection.
Dr. Charles B. Huggins, Chicago, Endocrine Relationships of Prostatic Cancer.

Dr. Frank Lynch Retires.—Dr. Frank W. Lynch, since 1915 professor of obstetrics and gynecology at the University of California Medical School, San Francisco, will retire this year. A native of Cleveland, Dr. Lynch graduated at Johns Hopkins University School of Medicine, Baltimore, in 1899, serving there as assistant instructor and associate in obstetrics from 1900 to 1904. The following year he joined Rush Medical College, Chicago, as instructor in obstetrics and from 1909 to 1915 was assistant professor of obstetrics and gynecology. In 1924 he was chairman of the Section on Obstetrics and Gynecology of the American Medical Association. Dr. Lynch was president of the American Gynecological Society in 1933, of the San Francisco Obstetrical and Gynecological Society in 1930 and of the Pacific Coast Obstetrical and Gynecological Society in 1931. He is an honorary member of many groups concerned with his specialty and has written extensively on the subject. He is 71 years of age.

ILLINOIS

New Searle Pharmaceutical Laboratories.—G. D. Searle & Co., manufacturers of pharmaceuticals for more than fifty years, recently opened their new laboratories in a modern streamlined building in Skokie on the northwest limits of Chicago. The research laboratory, occupying almost the entire second floor, consists of three divisions, organic synthesis, bio-assay and analytical. The synthetic organic laboratories



New Laboratories of Searle & Co.

which occupy the largest area are separated by partitions of shatterproof glass to provide complete safety in case of fire or explosion. There are laboratories for bacteriology and pharmacology. The pharmacology department consists of three laboratories on the research floor, directly connected with the animal rooms in the basement. The analytical division occupies the west wing of the research floor and includes an optical room and adjoining dark room. These have been joined because of the constant increase of new technics and methods which employ optical and frequently photographic instruments for the perfection of the analysis, reduction of labor and precise measurement of smaller amounts of material. A large auditorium occupies the entire wing of the basement and will be available to employees and to local medical societies. The general offices are located on the upper tier of the building. The building is air conditioned and humidity controlled throughout.

Chicago

Dr. Jacob Krafft Honored.—Dr. Jacob C. Krafft, clinical professor of pediatrics, Loyola University School of Medicine, was guest of honor at a dinner at the Hotel LaSalle, May 13, given by the Northwest Branch of the Chicago Medical Society and friends to honor his many years of service in the profession and in special recognition of his work in the care of the mentally handicapped child. Dr. Krafft was presented with a sphygmomanometer.

Physician Denied Appeal in Draft Bribery.—The United States Supreme Court has denied the petition of Dr. Joseph P. Gardzielewski for review of his conviction on charges of aiding and abetting a local draft board chairman in taking a bribe from a draft registrant seeking deferment, newspapers recently reported. The physician and Joseph M. Nosek, the board chairman, were tried together and both were convicted. The physician received a two year prison sentence. His appeal was based on the contention that evidence was introduced at the trial that was applicable to Nosek's case but not to his own, thereby creating prejudice in the minds of the jury, it was stated. He was alleged to have suggested that the draft registrant might obtain a six month deferment by paying a certain sum to Nosek. The registrant was said to have reported the incident to authorities after conversations with Nosek and payment of $35 to him. The newspapers further report that the case was the first to reach the Supreme Court in the administration of the Selective Service Act.

IOWA

Twin Lakes District Meeting.—The Twin Lakes District Medical Society will hold its annual dry diagnostic clinic and twentieth annual assembly at Rockwell City, June 25. Clinics will be conducted by the following: Drs. Thomas J. Dry, Rochester, Minn.; James William Martin, Omaha; LeRoy H. Sloan, Chicago; John H. Randall, Iowa City, and James Dewey Bisgard, Fort Crook, Neb. Col. John I. Marker, Cedar Rapids, will discuss "The Medical Man and the Armed Services" and Drs. Frank P. Winkler, Sibley, and Robert L. Parker, Des Moines, president and secretary, respectively, of the state medical society, "The Iowa State Medical Society in War Time." The Twin Lakes district consists of the following counties: Buena Vista, Crawford, Calhoun, Carroll, Greene, Hamilton, Humboldt, Ida, Sac, Kossuth, Pocahontas. Webster and Wright.

MINNESOTA

State Medical Meeting in Duluth.—The Minnesota State Medical Association will hold its eighty-ninth annual meeting at the Duluth Armory, June 29-July 1, in Duluth, with headquarters at the Hotel Duluth, under the presidency of Dr. Herbert Z. Giffin, Rochester. The program will include the following speakers:

Dr. Armand J. Quick, Milwaukee, Present Status of the Hemorrhagic Diseases.
Dr. Archibald L. Hoyne, Chicago, Modern Methods of Control for Measles, Scarlet Fever and Diphtheria.
Dr. Miland E. Knapp, Dr. John F. M. Pohl and Lillian A. Hubmer, R.N., Minneapolis, An Evaluation of the Kenny Technic of Treatment for Poliomyelitis.
Dr. Anton J. Carlson, Chicago, Some Unknowns in the Pathologic Physiology of Aging.
Dr. Paul H. Holinger, Chicago, Esophageal Diseases.
Dr. Ferdinand H. Haessler, Milwaukee, Ocular Tuberculosis.
Dr. John R. Lindsay, Chicago, Ménière's Disease.

There will be clinical pathologic conferences and symposiums on obstetrics, virus diseases, newer therapeutic measures, anesthesia, the use of blood substitutes, emergency surgery, tuberculosis, and diseases of the eye, ear, nose and throat. Among the speakers at the round table luncheons will be Col. Fred W. Rankin, Lexington, Ky., President of the American Medical Association, on "Colon Surgery"; Dr. William C. Keettel Jr., Madison, Wis., "Treatment of Prolonged Labor," and Drs. Ernest L. Meland and Charles D. Creevy, Minneapolis, "Obstruction of the Vesical Neck." On Wednesday afternoon there will be an industrial health and safety conference with the following speakers:

Dr. Carl M. Peterson, Chicago, The Doctor in Industry's War Effort.
Dr. Leslie W. Foker, Minneapolis, Minnesota's Industrial Health Program.
Dr. Frank J. Elias, Duluth, Prevention and Treatment of Heat Collapse Among Industrial Workers.
Austin F. Henschel, Ph.D., Minneapolis, Diet and Fatigue.
Dr. Robert F. McGandy, Minneapolis, First Aid to Injured Workmen.
Mr. A. N. Wold, St. Paul, What the Medical Profession Can Do to Increase Safety and Health in War Industries.

Dr. Arthur C. Christie, Washington, D. C., will deliver the Russell D. Carman Memorial Lecture Tuesday afternoon on "Diagnosis and Treatment of Bronchiectasis." At the annual banquet Tuesday evening the speakers will be Dr. Carlson on "Black Oxen and Toggenburg Goats" and Colonel Rankin, "The Challenge of the War to American Medicine." On this occasion the Southern Minnesota Medical Association Medal will be presented.

MONTANA

State Medical Meeting.—The sixty-fourth annual meeting of the Medical Association of Montana will be held in Missoula, July 8-10. The speakers will be:

Dr. Lawrence R. Boies, Minneapolis, Headache.
Dr. George J. McHeffey, Billings, Pathology of Silicosis and Silicotuberculosis.
Dr. Frank I. Terrill, Deer Lodge, Clinical Aspects of Silicosis and Silicotuberculosis.
Dr. Henry K. Ransom, Ann Arbor, Mich., Fundamental and Clinical Considerations in Intestinal Obstructions.
Dr. Norman F. Miller, Ann Arbor, The Human Cervix in Health and Disease.
Dr. Cyrus C. Sturgis, Ann Arbor, Coronary Thrombosis: Discussion of Some of the Errors of Diagnosis.
Howard B. Lewis, Ph.D., Ann Arbor, Fortification and Enrichment of Foods, and Nutritional Significance of the Vitamins.
Dr. Jerome P. Nesselrod, Evanston, Ill., Is Rectal Cancer Preventable?

There will be panel discussions on diseases of the rectum, management of perforated appendix, pelvic disease in the female, diseases of the blood, and vitamins. Drs. Nesselrod and Jay M. Garner, Winnetka, Ill., will present a film on "Proctoscopic Color Photography."

NEW HAMPSHIRE

State Medical Election.—Dr. Timothy F. Rock, Nashua, was chosen president of the New Hampshire Medical Society during its annual meeting in Manchester, May 12-13. Dr. James W. Jameson, Concord, was named vice president and Dr. Carleton R. Metcalf, Concord, was reelected secretary-treasurer.

NEW MEXICO

State Medical Meeting in Santa Fe.—The annual meeting of the New Mexico Medical Society will be held at the La Fonda Hotel in Santa Fe, June 25-27, under the presidency of Dr. Carl Mulky, Albuquerque. The speakers will be:

Dr. Thomas D. Cunningham, Denver, Allergy and Acute Disturbances of the Gastrointestinal Tract.
Dr. William W. Haggart, Denver, Surgical Treatment of Acute Conditions of the Abdomen.
Dr. George P. Lingenfelter, Denver, Skin Diseases Under War Conditions.
Dr. Franklin G. Ebaugh, Denver, Prevalent Personality Problems of Childhood and Adolescence.
Dr. James B. Walton, Denver, Treatment of Pylorospasm.
Dr. Gerrit Heusinkveld, Denver, Modern Concepts of Ovarian Surgery.
Dr. Robert G. Packard, Denver, General Considerations in the Treatment of Malunited and Nonunited Fractures.
Dr. Andres Ferret, Silver City, Osteomyelitis of the Skull.
Dr. Meldrum K. Wylder, Albuquerque, Adequate Nutrition for Children During War Period.
Dr. Albert W. Egenhofer, Santa Fe, Eye Conditions of Interest to the General Practitioner.
Mr. Harvey T. Sethman, Denver, Procurement and Assignment Service.

There will be a round table luncheon on Thursday and on Friday with the following speakers: Dr. Cunningham, allergy; Dr. Haggart, surgery; Dr. Heusinkveld, obstetrics; Dr. Ebaugh, psychiatry, and Dr. Packard, orthopedics.

NEW YORK

Medical College Changes Entrance Date.—Albany Medical College announces that at a recent meeting of the faculty it was decided to admit a freshman class on July 13 and the next one March 29, 1943.

Scarlet Fever Quarantine Abandoned.—The state sanitary code was amended, April 1, to provide for the discontinuance of placarding and quarantining of premises for scarlet fever, although isolation of the patient and personal quarantine of household contacts remain unchanged. German measles or rubella and Vincent's angina have been removed from the list of reportable diseases, also effective April 1. The *Bulletin* of the Onondaga County Medical Society and the Syracuse Academy of Medicine points out that in the case of the measles no effective control measures are available and the reporting does not serve a sufficiently useful purpose to justify the time and expense involved in the tabulation of numerous reports. Vincent's angina has been removed from the list because, with the practical eradication of diphtheria, there isn't the likelihood of confusing the diagnosis with that of diphtheria.

Maternal and Child Welfare Teaching Day.—The state department of health and the Medical Society of the State of New York sponsored a regional maternal and child welfare teaching day at the Westchester Country Club, Rye, May 20, in cooperation with the Dutchess, Orange, Putnam, Rockland and Westchester county medical societies. The afternoon program included the following speakers: Drs. Vincent P. Mazzola, Brooklyn, "Complications of Pregnancy: Heart Disease, Tuberculosis and Diabetes"; Charles A. Weymuller, Brooklyn, "Newborn Apnea and Resuscitation: Causes, Treatment, After-Effects on Child," and Charles A. Gordon, Brooklyn, "Procedure for Study of Maternal Deaths." The evening program was addressed by Drs. Philip Levine, Newark, N. J., "Importance of RH Factor in the Blood: Its Effects on Transfusion Reactions, Erythroblastosis, Miscarriages and Stillbirths" and William E. Studdiford Jr., "Chemotherapy."

New York City

Lectureship Named for Dr. Niles.—Tau chapter of Nu Sigma Nu fraternity at Cornell University Medical College has voted to name its annual lectureship for Dr. Walter L. Niles, dean of the college for many years and acting dean at the time of his death in December. A fellowship in the department of medicine at Cornell also has been established in Dr. Niles' memory.

Training in Physical Therapy.—Columbia University announces a program of professional studies for the training of physical therapy technicians to begin in September and to extend over a two year period. The clinical and laboratory instruction will be given at the Vanderbilt Clinic, Neurological Institute, Presbyterian Hospital and the New York Orthopaedic Dispensary and Hospital. Two years and sixty semester hours of college, including courses in physics and biology, shall be required or graduation from an accredited school of nursing or an accredited school of physical education.

Bust of Henry Fairfield Osborn.—The unveiling of a bust of the late Henry Fairfield Osborn, Sc.D., for many years president of the American Museum of Natural History, was a feature of the official opening of the Hall of North American Mammals at the American Museum of Natural History, April 8. The acting president, A. Perry Osborn, son of Professor Osborn, presided. The career of Professor Osborn was summarized by William K. Gregory of the museum and James Rowland Angell, formerly president of Yale University. The bust was unveiled by Professor Osborn's daughter, Mrs. Jay Coogan. Announcement was made during the ceremonies of the receipt of a $500,000 fund from the estate of the late Henry Robinson Towne. This sum will be added to the general endowment and will be used to carry on research on animal behavior and similar fundamental problems. The Hall of North American Mammals is to contain twenty-nine groups, of which eleven have been completed. Dr. Osborn died on Nov. 6, 1935, aged 78. In 1890 he became professor of biology at Columbia University, where from 1910 until his death he was research professor of zoology. In 1891 he became curator of the department of vertebrate palentology at the American Museum of Natural History.

NORTH CAROLINA

New Public Health Officers.—Dr. Nathaniel Thomas Ennett, Greenville, was elected president of the North Carolina Public Health Association at its annual meeting in Charlotte, May 14. Dr. William P. Richardson, Chapel Hill, was named vice president and Dr. Clem Ham, Monroe, secretary-treasurer to succeed Dr. Ralph J. Sykes, Raleigh.

State Medical Election.—Dr. James W. Vernon, Morganton, was chosen president-elect of the Medical Society of the State of North Carolina and Dr. Donnell B. Cobb, Goldsboro, was installed as president. Other officers include Drs. George S. Coleman, Raleigh, and Julian A. Moore, Asheville, vice presidents, and Roscoe D. McMillan, Red Springs, secretary-treasurer.

District Meeting.—The Eighth District Medical Society was addressed in North Wilkesboro, April 21, among others, by Drs. Robert J. Lovill, Mount Airy, on "Nutrition Deficiencies and Diseases of Infancy and Childhood"; Charles H. Mauzy Jr., Winston-Salem, "Recent Advances in Prenatal Care"; Sidney F. LeBauer, Greensboro, "Rheumatic Fever, Diagnosis and Treatment"; George W. Joyner, Asheboro, "Parathyroid Tumors," and Tinsley R. Harrison, Winston-Salem, "The Nervous Heart."

Activities at Bowman Gray School of Medicine.—Dr. Frederick R. Taylor has been promoted to associate professor of clinical medicine at the Bowman Gray School of Medicine, Winston-Salem, and Dr. Wilbur C. Thomas to assistant professor of pathology. According to the dean, Dr. Coy C. Car-

penter, gifts, grants and other financial assistance amounting to $451,110 were received during the year. Three members of the Bowman Gray family, Mrs. B. F. Bernard, Mr. Bowman Gray Jr. and Mr. Gordon Gray, provided $409,700 of the total. Beginning with the new academic year June 29, instruction will be offered to three classes—freshman, sophomore and junior. A new class will be added March 22, at which time, through the promotion of the junior class, the work of the senior class will also be added.

OHIO

Brush Foundation Receives $250,000.—An anonymous donor has given $250,000 to the Brush Foundation, Western Reserve University School of Medicine, Cleveland, for the research and educational work of the foundation under the supervision of William Walter Greulich, Ph.D., director of the foundation and professor of physical anthropology and anatomy in the medical school.

Zoologist Honored.—Raymond C. Osburn, Ph.D., Columbus, was guest of honor at a dinner, May 11, given by friends, students and associates to mark his impending retirement as chairman of the department of zoology and entomology at Ohio State University, Columbus, a position he has held for twenty-five years. He was presented with a bound volume of letters from present and former students and colleagues. Dr. Osburn received his degree in philosophy at Columbia University, New York, in 1906. At one time he served as lecturer in biology and embryology at Starling Medical College, Columbus, professor of biology at Fargo (North Dakota) College, assistant professor at Barnard College, Columbia University, New York, professor of biology at Connecticut College for Women, New London, Conn. He has also served as scientific investigator at the U. S. Bureau of Fisheries, Woods Hole Station, Woods Hole, Mass.

PENNSYLVANIA

Meeting of Ophthalmologists.—The first annual meeting of the Eastern Pennsylvania Association of Eye, Ear, Nose and Throat Physicians was held at the Schuylkill Country Club near Pottsville, April 29. The following officers were elected: Drs. James E. Landis, Reading, president; Charles L. Fackler, York, vice president, and Sterling F. Mengel, Pottsville, secretary-treasurer. The speakers at the meeting were:

Dr. Benjamin F. Souders, Reading, Ocular Absorption of Certain Sulfonamides.
Dr. Thomas R. Gagion, Pittston, Ocular Signs of Myasthenia Gravis and the Prostigmin Test.
Dr. Horace J. Williams, Philadelphia, Infections of the Orbit.
Dr. Douglas MacFarlan, Philadelphia, Deafness.
Dr. Algernon B. Reese, New York, Practical Ophthalmological Therapeutics.
Dr. Samuel R. Kaufman, Wilkes-Barre, Allergy of the Eye, Ear, Nose and Throat.

Philadelphia

Personal.—Dr. Esmond R. Long, professor of pathology, University of Pennsylvania School of Medicine, and director of the laboratories of the Henry Phipps Institute, has recently been elected an honorary member of the Society for the History of Medicine, Buenos Aires, Argentina.

Society Starts Plan to Examine Members.—A special committee appointed by the Philadelphia County Medical Society is in operation to provide for periodic health examinations of its members, according to the society's weekly bulletin. Examinations will be complete and will include laboratory studies, roentgenology and electrocardiography. Members may select their various examiners from panels of cooperating physicians and all data will be secret. The only cost for the entire program will be a registration fee of $2 to cover extra clerical help. Examinations will begin as soon as 200 members have enrolled.

TEXAS

Study on Diseases of the Chest.—The State Tuberculosis Sanatorium is sponsoring lectures and clinical demonstrations in diseases of the chest for physicians in the state during June and July. There are no fees and the physician may remain as a guest of the hospital for two weeks. Material will be available concerning all phases of diagnosis and treatment of adult and childhood tuberculosis. Various nontuberculous conditions will be presented for study and comparison. Any physician licensed to practice medicine in the state of Texas may attend. Additional information may be obtained from Dr. Joseph B. McKnight at Sanatorium, Texas.

WISCONSIN

Lectures by Dr. Heidelberger.—The Wisconsin Alumni Research Foundation sponsored two lectures by Michael Heidelberger, Ph.D., associate professor of biochemistry, Columbia University College of Physicians and Surgeons, New York, on May 7 and 8. His subjects were "Modern Concepts in Immunity" and "The Part of Chemistry in Their Development."

Changes in Health Officers.—Dr. Glenn V. Hough, Milwaukee, has been appointed medical director of the Marathon County Health Unit, succeeding Dr. Ernest Newman, Wausau, who has a similar position at Las Vegas, Nev.——Dr. Errol V. Brumbaugh, Milwaukee, has been appointed health commissioner of West Allis, filling the vacancy that occurred when Dr. Frank H. Russell, West Allis, recently resigned.——Dr. Frederick P. Knauf, Kiel, has been appointed city health officer of Kiel to fill the unexpired term of the late Dr. George Mathes, who resigned shortly before his death, February 19, after holding the position since 1900.

Meeting of Tuberculosis Specialists.—A meeting of the Wisconsin and Michigan Trudeau societies in Pembine was addressed, June 12-13, by:

Drs. Henry E. Cope and Christopher J. Stringer, Lansing, Mich., Sputum Examination Methods.
Drs. Anthony V. Cadden, Wauwatosa, and David Salkin, Hopemont, W. Va., Preliminary Report on a Large Series of Routine Admission Bronchoscopies.
Dr. Charles R. Smith, Houghton, Mich., Treatment with Minimum Hospitalization.
Dr. William H. Oatway Jr., Madison, Mechanical Aids in Collapse Therapy.
Drs. John F. Sanders, Hawaii, and John B. Barnwell, Ann Arbor, Mich., Perirectal Abscess and Fistulas.
Dr. William M. Tuttle, Detroit, The Present Status of Extrapleural Pneumothorax.
Dr. John D. Steele Jr., Milwaukee, Experience with the Monaldi Method of Cavity Drainage.

One session was devoted to a symposium on the value and significance of positive gastric lavages in the diagnosis and treatment of pulmonary tuberculosis.

GENERAL

Medical Kits Stolen.—H. J. Anslinger, Washington, D. C., commissioner of narcotics, is asking physicians to cooperate in curbing the theft of medical kits from unlocked automobiles and points out that the number of medical kits stolen by addicts to obtain narcotic drugs is rapidly increasing and that many of these thefts have occurred in unlocked automobiles. In April eleven kits were stolen from automobiles of physicians within the city of Los Angeles and neighboring communities.

Survey of Errors in Causes of Death.—Kurt Pohlen, Ph.D., and Dr. Haven Emerson, New York, are making a survey of the amount of errors in certification of causes of death, working with records of autopsies. Clinical findings and opinion have been compared with the postmortem protocols of the same cases. The study and collection of data are under the auspices of the joint committee on autopsies of the American Public Health Association and the American Hospital Association. The study ultimately will include 100,000 cases.

Special Society Elections.—Dr. Lewis J. Moorman, Oklahoma City, was chosen president-elect of the National Tuberculosis Association at its meeting, May 8, and Dr. James Burns Amberson Jr., New York, was installed as president. Dr. Charles J. Hatfield, Philadelphia, was reelected secretary.——At the annual meeting of the American Branch of the International League Against Epilepsy in Boston, May 18, the following officers were elected: Dr. Wilder G. Penfield, Montreal, Canada, president; Dr. Charles D. Aring, Cincinnati, vice president, and Dr. Frederic A. Gibbs, Boston, secretary-treasurer.

Registration of Diathermy Apparatus.—The application form to be used in registering diathermy apparatus should be filled out promptly, all information pertinent to the particular case being given and then mailed to Mr. T. J. Slowie, secretary, Federal Communications Commission, Washington, D. C. If the application is satisfactory, the commission will send the applicant a certificate of registration, which must be affixed in a conspicuous place to the diathermy machine to which it pertains. The certificate may be attached to the machine by means of mucilage, cellulose tape or any adhesive material so long as the printed matter is plainly visible. Attention is called to the necessity of having each unit of diathermy apparatus in one's possession separately registered. Consequently, it must be clearly understood that one application form is to be used for only one unit. If the applicant has other units he should indicate how many, and application forms will be sent for each one. The term "diathermy" is intended to include medical and surgical diathermy. Possession of an electric knife involves

the following principles to determine whether such knife should be registered: If the knife is an attachment of a diathermy machine, there is no need for a separate registration of the knife, since the radio energy generating apparatus will already be registered. If, however, the knife is not used in connection with or as a separate attachment to a diathermy unit, and if its radio energy generating apparatus is employed solely as an aid to surgical use, the knife should be registered. In effect, this means registering a diathermy unit which is used exclusively for surgical purposes. If the mechanism of a knife is not capable of generating radio frequency energy it need not be registered.

If a unit of diathermy apparatus which has been registered is ever transferred to the possession of another person, even for a short time, the person who takes possession must apply for a new certificate of registration. If the owner transfers, sells, assigns, leases or lends the registered apparatus, or if it is ever lost or stolen, such fact should be immediately communicated to the commission. In those cases in which there is a transfer of possession and the certificate of registration is not stolen or destroyed, such certificate should be returned to the commission. The commission should also be notified of any change in location of the apparatus. This registration does not apply to x-ray machines, sun lamps, infra-red lamps or ultraviolet ray devices.

Public Health Under Hitler's Rule.—The *Nieuwe Rotterdamsche Courant* of April 14 writes that there must be a drastic overhauling of the methods of training physicians. "The whole medical education must be revised and given another spirit. The medical problem is not the treatment of a sick individual, dissociated from his environment, but the combating of the illness of a member of the community, which is paid by the community, ordered by the community and responsible to the community. The state cannot allow such an important class as the medical class, which holds in many ways a key position in the new society, to remain apart from the community and to be kept apart because the medical teachers fail to appreciate their vocation. New teachers must be carefully chosen, because they must be fit to educate the new generation of physicians in the principles of the physicians' new communal task in every sphere of medical science."

L'Oeuvre of April 19 states that "the discontent of the medical profession cannot be denied. Many of the members of the Council of the Order, themselves—with the exception of a few young men somewhat prematurely appointed, won over from the start to the methods of the iron fist and favoring authoritarian decisions—view with some disquiet the upsetting of professional traditions which were a guaranty for the patients as well as for the physician and which it is not enough to call 'routine' to render ineffective. There is no art in which it is more necessary to have long experience before passing judgment. The decrees which Vichy produces each day by the dozen, replacing the unwritten laws, are particularly severe for the medical profession. New tasks are perpetually being imposed while its independence and possessions are ceaselessly diminishing. If there is any need to reduce the gasoline ration, the authorities take care not to tamper with the rations of the black market or of private cars which still take women and children for rides in Paris, but the cars of the country doctors are the first to suffer. And the last possessors are made to become co-proprietors of their car, regardless of whether the doctor they share with has the same rounds or not. As for the patients, who cares? One would like to know the bureaucrat who conceived this bright idea. The obligatory contributions for family allowances are three times as much for the medical profession as for any other. Why? Because the state subsidizes all other funds except those of the physicians. Why this exception? And the physician is now inflicted with far more graceless tasks than ever before. Medical certificates are perpetually in demand for the diets of his patients, for the wood and coal rations of old people and for the layettes of newborn babies. When the physician comes home, tired out with long walks and climbing innumerable staircases, he is faced with reams of clerical work, with all the certificates which await him. He also is responsible for all prophylactic measures against infectious disease and for the keeping up to date of statistics at the health services of the prefecture. He is now asked to point out to these same services those of his patients suffering from venereal diseases. The whole medical profession has risen in arms over this point, such a request to denounce one's patients being in fundamental opposition with the principle of professional secrecy. However lofty the motives of the venereal specialists in their fight against this disease, even though this denunciation is made into a contribution to statistical work, even though it is restricted to such patients as refuse to have intravenous injections over an indefinite period, it is distasteful to all physicians to practice with their patients such methods as are used only in the barracks and the brothel. Besides, the patients are wary nowadays. They pay their fee in cash and do not give their names. And the doctor has no more right to ask for their names than the priest in the confessional. . . . Is the medical profession still a liberal profession or is it to become a form of civil service?"

DNB of April 27 reports from Rowne that the German Sick Fund Institution for the Ukraine has been created for the reich Germans, who are carrying on their important work of reconstruction in the Ukraine, hundreds of kilometers from the homeland. Its task is to look after the maintenance of the health and the recuperation of all the reich Germans active in the Ukraine. Every reich German active in the reich commissariat of the Ukraine must contribute to this institution, if his income is under a certain amount, just as in the reich. In contrast with the reich, the Germans in the Ukraine are insured if their incomes are less than 600 marks a month, whereas in the reich the limit is 300 marks a month; this is because of the special importance of health conditions in the Ukraine area. Voluntary participation in the scheme is also possible. As double insurances are not permissible, those active in the Ukraine must have withdrawn from the sick funds to which they belonged in the old reich; but this withdrawal is only temporary. The membership of a sick fund in the reich lapses for the period of activity in the Ukraine.

The new institution will not be inferior in its benefits to any similar institution in the reich. The contributions will be about as high as those in the reich. For those reich Germans who still draw their pay in the homeland, the contributions will be paid into the general sick fund of Katowice (Upper Silesia). Reich Germans in the Ukraine and their families in the reich will each receive a certificate enabling them to go to any doctor according to the system of free choice of doctors. By the creation of this sick fund institution a great work has been started, and the social welfare of the reich Germans in the Ukraine in the field of health insurance has been assured.

The Swedish trade union paper *Fackföreningsrörelsen* of April 24, in an article on the German labor situation, states that various regulations have been published against taking sick leave, especially in the armament factories. Press campaigns and meetings explain that to take holidays because of sickness is paramount to treason. In this connection it may be mentioned that the health condition of the German people has already been largely undermined by many years' hard work. The *Reichsgesundheitsblatt* contains sensational figures about the registered cases of illness in the reich over a period of forty-eight weeks in 1939 and in 1941:

	1939	1941
Diphtheria	128,897	154,752
Scarlet fever	119,730	226,755
Tuberculosis	69,502	88,312
Paratyphus	2,648	3,800

During the first twenty-five weeks of 1939 there were 6,135 cases of dysentery against 12,705 during the same period of 1941. Similar figures are shown for whooping cough. Compared with the difficult years preceding national socialist rule, these illnesses increased by from 500 to 800 per cent. The difficult conditions in Russia must have caused even these figures to rise greatly last year.

To increase the capacity of overworked soldiers and workers, more extensive use is being made of stimulants such as amphetamine. A luftwaffe doctor recently considered it necessary to issue a warning against such preparations in the *Deutsche medizinische Wochenschrift.*

Deaths in Other Countries

Sir Edward Coey Bigger, M.D., Dublin, Ireland, formerly medical commissioner of the Ireland Local Government Board, chairman of the Irish Public Health Council and crown representative for Ireland on the General Medical Council, died in Dublin, June 1, aged 81.

CORRECTION

Dr. Stuart McGuire.—Under Medicine and the War in THE JOURNAL, June 6, page 504, in the item "Medical College of Virginia Hospital Unit," it was stated that "During the first world war, Base Hospital No. 45 was organized at the Medical College of Virginia under the leadership of the late Dr. Stuart McGuire." This information was taken from the Richmond, Va., *Times-Dispatch* of April 28. Dr. Stuart McGuire of Richmond is still living and well at the age of 74.

Foreign Letters

LONDON

(From Our Regular Correspondent)

May 2, 1942.

Medical Reconstruction After the War

The Ministry of Health has appointed a committee of leading physicians and others to inquire into the organization of medical schools, particularly in regard to the facilities for clinical teaching and research and to make recommendations. The minister of health previously announced in the House of Commons that it will be the objective of the government as soon as may be after the war to insure that by means of a comprehensive hospital service appropriate treatment shall be readily available to every person in need of it. It is accordingly proposed to lay on the major local authorities the duty of securing, in close cooperation with the voluntary agencies engaged in the same field, the provision of such a service by placing on a more regular footing the partnership between the local authorities and voluntary hospitals on which the present hospital services depend. The government recognizes that, to achieve the best results and to avoid wasteful multiplication of accommodation and equipment, it will be necessary to design such a service by areas substantially larger than those of individual local authorities. Patients will be called on to make a reasonable payment toward the cost, whether through contributory schemes or otherwise. In working out the details of the government's proposals, special consideration will be given to the position of the teaching hospitals and to the question of assisting them by increased educational grants. This particular aspect of the future of hospital service is to be examined by the committee now appointed. The committee is not concerned with the curriculum for the training of medical students but with organization of medical teaching and its relation to the universities on the one hand and to the teaching hospitals on the other. It will consider such questions as the proper organization and distribution of medical schools, the appointment and remuneration of the teaching staff, the provision of an adequate range of cases for study and of suitable equipment, including the possibility of linking hospitals for teaching purposes and the organization of postgraduate teaching, both for students specializing in some branch and for physicians wanting refresher courses.

Rehabilitation After Injuries to the Central Nervous System

At the Royal Society of Medicine, Prof. Geoffrey Jefferson opened a discussion on rehabilitation after injuries of the central nervous system. In a consecutive series of head injuries seen by him in private practice during the last two years the average time before specialist advice was sought was six months. Many cases were not seen until seven, eight or nine months after the injury. By that time a neurosis had been firmly established in a number of cases.

As to the validity of headache after a head injury, there are many doubters. We are learning about the mechanism of headache and are abandoning some time honored creeds, notably the relation between pressure and headache as against local distortions of dural septums and traction on or pulsation of vessels. We do not with certainty know how to apply this knowledge, except that we have comparative knowledge that pain continuing with unwavering intensity for months on end rarely has an organic cause. But we must beware of the danger of regarding all who have had a head injury as neurotic.

Rehabilitation after head injury includes (1) diversional and constructive occupations of sufficient variety and varying degrees of difficulty for those still confined to bed as well as for the ambulant, (2) hospital maintenance work in the ward or outside, (3) physical therapy and (4) intellectual and recreational pursuits. There are two stages. The first stage covers the period in the hospital when the patient is confined to bed or ambulant and undergoing early treatment for the repair of his injury. The time at which the patient's interest is specifically aroused varies with the severity of the injury, the speed of recovery, the age and the intelligence. But rehabilitation in a diversional form should be instituted early while the patient is confined to bed and should take the form of reading or being read to, jigsaw, crossword and other puzzles, drawing or coloring, needlework, net and basket making, sewing, knitting and rug making. Physical therapy is provided for in all our brain injury centers.

The second stage begins some six weeks after the injury, when we should be in a position to gage the prospects. The treatment will be in the main as in the first stage but with additions, such as gymnastics and physical training, speech training in cases of dysphasia, work in the garden, carpenter or engineer shop work, organized games (cricket, football, baseball), walks outside the hospital grounds, and visits to the town, the shops and the cinema.

How the People Are Fed

The distribution of food is controlled and rationed by the government. The minister of food has sent a personal letter of thanks to every executive food officer in which he says "It has been a year of many new ventures in food control, and all of them have demanded from your staffs hard work, patience and resource. Experience and elasticity are necessary for success in our great task of maintaining the health and courage of our people by keeping them adequately fed." There are fifteen hundred local offices or local ministries of food. Some idea of their work is given by a food officer in a typical borough in the London area. It is partly residential and partly industrial and has a population of one hundred and twenty thousand, which is served by one thousand food shops and six hundred catering establishments. There have been eighty-five thousand changes of address, and each takes about seven minutes to deal with. During the year the office has had to issue fifty-one thousand emergency cards for persons temporarily entering or leaving a district or who have lost their ration books. In addition, three hundred and sixty thousand ordinary ration books have been issued.

In a normal week never fewer than four thousand persons pass through the office with complaints or inquiries. These figures show how essential is full and harmonious cooperation between the public and the local food office. During the last three months there have been three thousand applications from persons wishing to change their retailers. Every person must be registered with one retailer, from whom alone they can obtain rationed foods. The applications to change were granted only when the reasons given were sound. To feed the one hundred and twenty thousand persons in the borough, the local food officer has to make available every week 6,000 pounds of meat, 20 tons of bacon, 20 tons of margarine, 12 tons of cooking fats, 46 tons of sugar, 4½ tons of cheese, 151,000 eggs (when they can be got) and 60,000 gallons of milk. This distribution of food is the most colossal undertaking ever attempted by one man. The food offices are ready for any emergency. If one occurred from extensive destruction in an air raid, the emergency feeding scheme could be put into complete operation at three hours' notice. The food officer has for this purpose at least twice as much food as the Ministry of Food said he should have. When our war organization for this or other purpose is tested it will be found second to none and indeed more elastic and adaptable than the machine-like method of

the Germans. They have had the advantage in the start, for we do not in time of peace make elaborate preparations for the destruction of other nations while lulling them into a sense of security by false assurances.

Tuberculosis in the Merchant Navy

The need for mass radiography for the early detection of tuberculosis in adolescents has been pointed out by the president of the Royal College of Physicians and others. In a letter to the *Times* the management and medical staff of the Seamen's Hospital call attention to the need for this in the merchant navy and for the amelioration of living conditions on board ship, which, especially in wartime, are peculiarly favorable to the spread of infection. Statistics show that tuberculosis is among the highest causes of death among seamen. Moreover, the incidence is increasing under war conditions. The experience of the Seamen's Hospital Society over a long period, both at its hospitals and at its King George's Sanatorium for Tuberculosis, is that seamen do not present themselves for treatment until the disease has taken so strong a hold on them that prolonged treatment is required. The three main reasons for this are (1) lack of facilities for detection and control of the disease in its earliest stages, (2) the anxiety of the sailor lest during his treatment his wife and children should be inadequately provided for and (3) long voyages without any medical attention and the disinclination of seamen to undergo prolonged treatment in a foreign port. The sufferers are a grave source of infection to their fellows in the restricted quarters of a ship.

The signatories realize the difference between the use of mass radiography in the fighting services and in civil life and the practical difficulties peculiar to the mercantile marine. But they suggest that examination by miniature roentgenography should be included in the routine examination of seamen by the Shipping Federation, to other parts of which no objection is raised. Effective control would entail the institution of a personal record card. This might appear to differentiate merchant seamen from other workers, but a strong argument in its favor is that the migratory character of a sailor's employment deprives him of the contact with a panel or family physician which is available to landsmen. Such a record could be incorporated in the seaman's discharge book and would be valuable to the physicians attached to the Seamen's National Approved Society in various ports.

The Abdominal Surgery of Total War

The Bradshaw lecture on "The Abdominal Surgery of Total War" was delivered at the Royal College of Surgeons by Surgeon Rear Admiral Gordon-Taylor under war conditions. The college had been damaged in the indiscriminate bombing of London, so that the lecture room could not be used and the lecture was delivered in one of the museum rooms, which for safety have been emptied of their valuable contents. In the crowded audience, naval and military uniforms were prominent. The lecturer said that the most frequent cause of abdominal injury throughout the centuries was war. But heretofore the male was almost exclusively involved. Among the most primitive tribes a deliberate attack of man on woman is almost unknown. In the animal kingdom it is only on the rarest occasion that the male has made an onslaught on the female. This holds even for the fierce carnivora. But the miscreant nations who exultingly initiated the indiscriminate bombings of "total war" have destroyed the lives of countless women and children. After two and one-half years of total war we can take stock of our experience of abdominal injuries and compare our war surgery with that of the previous great war.

The lecture was based on a series of six hundred operations for abdominal injuries in casualties from Dunkirk, in the navy and the air force and among civilians during air raids. The idea that the immediate mortality from abdominal injuries in war must be very high was not confirmed by the facts of the postmortem room. The immediate deaths due to abdominal injury were no more than 8 to 10 per cent of the total cases.

PENETRATING INJURIES

In most of the penetrating abdominal injuries the projectile was a small fragment of bomb casing. The recovery rate was high when operation was prompt. Not only might the bowel be perforated by bullets; it might be scorched by incendiary bullets. The destructive effects of flying glass in air raids were now familiar. Coils of intestine were often cut to pieces inside the abdomen or hung out of gashes in the abdomen. Viscera might be damaged by indriven fragments of bone although the missile did not penetrate the peritoneal cavity. As in the last war, the occasional immunity of viscera in penetrating wounds of the abdomen was observed. Also wounds of the hollow viscera occasionally recovered without operation. The importance of a buttock wound as leading to a track to the abdominal cavity was stressed. It was found in 20 per cent of all cases of abdominal injury. Hence the importance of not overlooking minute wounds of the buttock. The clothing should be removed and the patient examined all over. A case of large wound of the abdomen or of wide loss of abdominal wall was generally fatal.

INTESTINAL INJURIES

Suture for wounds of the small intestine had a lower mortality than resection and should be preferred whenever possible. In resection the lecturer used end to end suture. Lengthy resections imply severe wounding and are not so promising as smaller ones. Yet 6 feet of small intestine has been removed with success and with cobbling of other injuries.

In wounds of the colon, suture should be combined with local chemotherapy. Colostomy sometimes proved valuable in the last war. If performed, it should be done early, before infection has secured a firm hold. Sulfonamide derivatives locally and orally have proved a valuable adjunct to surgery for patients with a damaged large intestine, and their use prophylactically is to be recommended. Resection of the colon is indicated in cases of infarction, extensive separation from the mesocolon, and where the viability of the intestine is destroyed or the wound is so large as to suggest formation of an artificial anus.

INJURIES OF THE STOMACH

The prognosis of injuries of the stomach is better than in the last war: 60 per cent of recoveries as against 36.3. Acute dilatation of the stomach has been strikingly frequent in injuries not only of the stomach but of other parts of the body. It has been observed in cases of severe contusion of the chest, fractured pelvis and ruptured bladder.

THE EFFECT OF EXPOSURE TO BLAST

The direct effects of blast are experienced only close to the explosion, but the many indirect effects may produce death or serious injury. The intestine may show hemorrhages varying from hemorrhagic spots to large annular extravasations or even rupture of the bowel. The spleen may be torn. The liver may be bruised or torn; the kidneys and bladder are less often implicated. Blood clot has been seen in the peritoneum, and retroperitoneal hematomas are characteristic, as well as effusions into the mesentery.

Abdominal injury due to blast in water ("immersion blast") was observed in the last war as well as in this war. It is produced by the near explosion of depth charges. Clinically the cases varied much in degree from mere ileus to serve peritonitis after rupture of the intestine. Hemorrhage from the nose and ears, hemoptysis, melena and hematuria have been observed.

THE RESULTS

In the lecturer's series of 163 operations for injuries of the large intestine there were 65 recoveries; in 119 operations on the small intestine there were 75 recoveries. Exteriorization operations on the large intestine did badly. Sulfonamide derivatives locally and orally proved of great value. Transfusion of blood or blood derivatives rendered a host of patients operable who otherwise would have perished.

BUENOS AIRES

(From Our Regular Correspondent)

April 18, 1942.

Failure of German Army Medical Service

The services of military hygiene and sanitation in the eastern German front were really deficient during the winter. The situation was aggravated because of the severity of the Russian climate and the appearance of infections in the military camps and also because of difference of opinion between the chiefs of the Nazi party and of the German army. General Dr. Wolff, the highest chief of the German department of hygiene and sanitation, published an item at the beginning of the winter emphatically declaring that the medical and sanitary preparations for war on the eastern front were totally insufficient. Dr. Wolff put the blame for the failure on Dr. Conti, chief of German physicians, who during the courses on medical and sanitarian preparedness gave more interest to ideologic teachings than to practical instruction. Dr. Wolff asked the proper authorities for two changes in order to improve the courses of war medicine and war sanitation, namely (1) discontinuance of the ideologic courses of the Nazi party with the military and racial views of the party and (2) immediate rehabilitation of Jewish physicians for service on military sanitation. However, Dr. Conti obtained support from the authorities for the refusal of Dr. Wolff's first request. The second request was only partially accepted: Jewish physicians were rehabilitated for service as auxiliary physicians in civil hospitals but not in the army. Then the military commander, "in revenge," mobilized all physicians up to the age of 60, and by this step the sanitary service of the reich was severely harmed. The failure of military sanitation is pointed out by Marshal Brauchitsch as one of the main causes for the retreat of the German army in Russia. Practically all the services of military sanitation are directed by the storm troops, which are those of Hitler's personal guard (S. S.). The sanitary situation at the front is grave. According to German reports the number of deaths from relatively slight wounds have increased because of the lack of a sufficient number of experienced surgeons. The number of cases of exanthematic typhus and of other infections has increased. Freezing has caused many more casualties than it caused during the war of 1914-1918. The cases of septicemia are also increasing.

New Building of Academy of Medicine

The National Academy of Medicine of Buenos Aires opened its new building on April 16. The academy was established in 1822; later it was united with the National Faculty of Medicine, from which it was again separated in 1905. The work of the academy for the last few decades has been on the scientific rather than on the pedagogic field. The National Congress made of it an autonomous academy in 1925 in view of the efforts of Drs. Eliseo Cantón, Domingo Cabred and some other doctors. The scientific work carried on by the academy is of great importance. The new building was constructed with donations from the government and from Drs. Rafael and Marcelino Herrera Vegas. The government made a donation of 2,000,000 pesos ($500,000) to the academy. The beautiful building has several rooms, an assembly hall for eight hundred persons, laboratories and a library with twelve thousand books. The Instituto de Investigaciones Físicas Aplicadas a la Patología Humana is a department of the academy. Dr. Mariano R. Sastex is the head of the department.

Proceedings of Pan American Meeting

The Jornadas Neuro-psiquiátricas Panamericanas held its second reunion at Lima on March 20-25, 1939. The proceedings of that reunion were recently published in two large volumes. Drs. Honorio Delgado and J. O. Trelles, professors of neuropsychiatry at the University of Lima, are the editors. The volumes contain important material on neurology, psychiatry and legal medicine which show the great progress of Latin American neuropsychiatrists. Some of the most important articles are on the variability of the cellular architecture of the cortex of the frontal lobe of the brain; pain from physiologic, anatomic, clinical, medicolegal and toxicologic angles; hypochondria; schizophrenia; social problems in relation to care of patients with mental diseases; biologic bases of civil incapacity of patients with mental diseases. The Tercera Jornada Neuropsiquiátrica Panamericana will be held at Buenos Aires in November with Dr. Nerio Rojas as president of the reunion. Dr. Nerio Rojas is a professor of legal medicine at the Faculty of Medicine of Buenos Aires.

Course on War Surgery

A course on war surgery was recently offered by the Facultad de Ciencias Médicas of Buenos Aires to physicians and youths in advanced studies of medicine. It began on April 16. Dr. Alejandro Ceballos, professor of clinical surgery of the faculty, delivered a lecture on occasion of the opening of the course. The head of the University of Buenos Aires, several well known chiefs in the army and members of the profession attended the inaugural lecture, which dealt with the most modern treatments of wounds. The course is given as a measure of preparedness.

Personals

Prof. Dr. Eliseo B. Segura was appointed president of the National Academy of Medicine of Buenos Aires to succeed Dr. Mariano R. Castex, who recently resigned.——Dr. Eduardo Braun Menéndez of the Instituto de Fisiología of Buenos Aires, who recently lectured in the United States, was given an honorary degree of doctor of laws by the University of California.——Prof. Dr. Edgar Adrian of Cambridge lectured during March at the Academia Nacional de Medicina of Buenos Aires and at the Faculties of Medicine of Buenos Aires, La Plata and Rosario on neurophysiology. He also read papers before the Sociedad Científica Argentina, where he explained the problems of evacuation of children in London.——Dr. R. Castro O'Connor of Buenos Aires left Argentina for Great Britain recently to study plastic surgery. He will carry on his studies under the auspices of the Faculty of Medicine of Buenos Aires and the British Council. Dr. O'Connor will work in the clinic of Dr. Harold Gillies.——Dr. George T. Pack of the Memorial Hospital of New York came to Argentina last April. Dr. Pack established a scholarship in the Memorial Hospital of New York for Argentinean physicians who wish to carry on special studies on cancer.——Dr. Juan Carlos Mujica, head of the general department of sanitation of the navy of Argentina, was appointed traveling delegate by the Pan American Sanitary Bureau. He will travel with Dr. John F. Long, the visiting inspector of the bureau, and will engage in studies on the prevention of pestilential diseases in Chile, Peru and Ecuador.

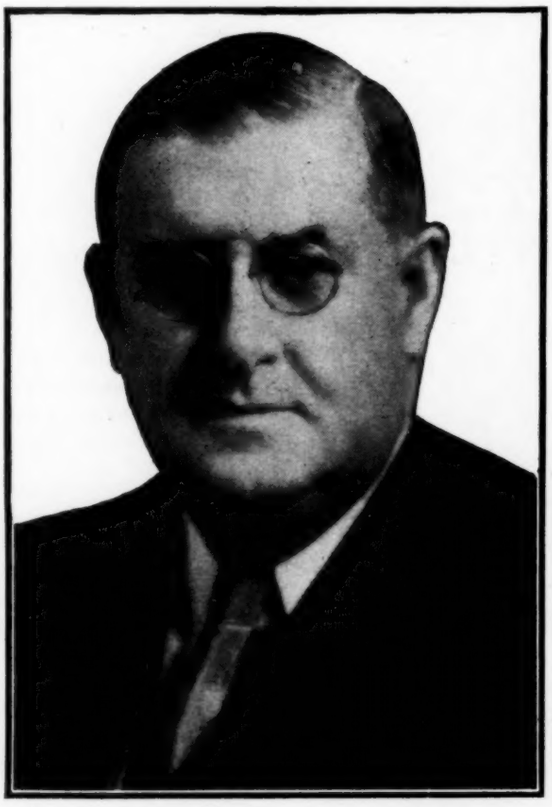
Brief Notes

There is typhus in almost all fighting fields in Europe. Therefore the general mail department of Argentina has established a service of disinfection of all mail from Europe, with the aim of preventing typhus epidemics in this country.

Deaths

William P. Wherry ✠ distinguished as an ophthalmologist and otolaryngologist, one of the leaders of American medicine in this field, died at his home in Omaha, June 13, aged 61. Dr. Wherry was born in Omaha, June 16, 1880. After attending preparatory schools in Omaha, he graduated from the University of Nebraska College of Medicine in 1903. He had been professor and chairman of the department of otolaryngology at the University of Nebraska College of Medicine and also a member and president of the staff of St. Catherine's Hospital and the former Evangelical Covenant Hospital. He was a member of the medical staffs of the Union Pacific, the Chicago, St. Paul, Minneapolis and Omaha and the Chicago and North Western railways.

Early in his medical career Dr. Wherry became associated with organizational activities, having served as president of the Omaha-Douglas County Medical Society in 1919, of the Medical Society of the Missouri Valley in 1932 and of the Nebraska State Medical Association in 1941. He was chairman of the Section on Laryngology, Otology and Rhinology of the American Medical Association in 1934 and had been vice president of the American Laryngological Association, vice president of the Advisory Board for the Medical Specialties and secretary-treasurer of the American Board of Otolaryngology from the time of its foundation in 1924. He was also a fellow of the American College of Surgeons, the American Otological Society, the American Laryngological Association and the American Laryngological, Rhinological and Otological Society.



WILLIAM P. WHERRY, M.D., 1880-1942

Dr. Wherry gave especially of his time and energy to the work of the Omaha Mid-West Clinical Society, for which he had been treasurer since 1933, and to the American Academy of Ophthalmology and Otolaryngology. In this organization, which has done a monumental work in graduate instruction in its field, he was secretary of the Section of Instruction from 1920 to 1926, first vice president in 1924, executive secretary-treasurer since 1926 and editor of its *Transactions* and *Bulletin* since 1930. His interest in graduate medical education was significant, and he had served since 1938 on the Commission on Graduate Medical Education.

Dr. Wherry had written many scientific contributions in the field of vision and on the pathology of the sinuses. He was widely known as a medical scientist, a teacher, a leader in public affairs and in education, a gentleman of charm and culture.

Edward Joseph Ill ✠ Newark, N. J.; College of Physicians and Surgeons, medical department of Columbia College, New York, 1875; past president of the Essex County Medical Society and the Medical Society of New Jersey; in 1893 vice president, in 1899 president and member of the executive council from 1901 to 1903 of the American Association of Obstetricians and Abdominal Surgeons; vice president for New Jersey of the Pan American Medical Congress in 1893; member of the Southern Surgical Association; chairman for the state of New Jersey of the American Society for the Control of Cancer; member of the board of governors of the American College of Surgeons; member of the board of education of Newark from 1878 to 1880; for many years state director of the Prudential Life Insurance Company of America; formerly surgeon to Woman's Hospital and medical director of St. Michael's Hospital; gynecologist, supervising obstetrician and trustee of St. Barnabas Hospital; consulting gynecologist, Beth Israel Hospital, Newark, All Soul's Hospital, Morristown, Mountainside Hospital, Montclair, and the Rahway Memorial Hospital, Rahway; president of the Society for the Relief of the Widows and Orphans of Medical Men of New Jersey; aged 88; died, June 9, at his summer home in Island Heights. The Academy of Medicine of Northern New Jersey, of which he was the first president, created a special award in honor of Dr. Ill, making the first presentation to him on his eighty-fifth birthday May 23, 1939 and at the same time conferring on him honorary membership. In 1934 a bust was presented to the academy to mark Dr. Ill's eightieth birthday. The presentation of his portrait to the Hospital of St. Barnabas and for Women and Children in 1940 marked his completion of fifty-eight years of service on the staff, and the following year the Essex County Medical Society awarded him a scroll of appreciation in recognition of his completion of more than fifty years in the practice of medicine.

Terry Monroe Townsend ✠ New York; University of Louisville (Ky.) Medical Department, 1897; past president of the Medical Society of the State of New York and the Medical Society of the County of New York; member of the House of Delegates of the American Medical Association in 1929 and from 1935 to 1938 and in 1941; member of the American Urological Association; fellow of the American College of Surgeons; diplomate of the American Board of Urology, Inc.; veteran of the Spanish-American War; director of urology, Morrisania City and Department of Correction hospitals; attending urologist, Lutheran Hospital; consulting surgeon, Sing Sing Prison Hospital, Ossining; consulting urologist, Ossining (N. Y.) Hospital and the Midtown and Community hospitals, New York; aged 65; died, May 16, of pneumonia.

Granville Scott Hanes ✠ Louisville, Ky.; Hospital College of Medicine, Louisville, 1900; professor of proctology at the Kentucky School of Medicine, 1905-1906; professor of diseases of the rectum at the University of Louisville School of Medicine from 1906 to 1923, clinical professor of proctology and later professor emeritus; member of the American Proctologic Society and the Southern Surgical Association; fellow of the American College of Surgeons; in 1929 president of the Kentucky State Medical Association; on the staffs of the Louisville City, Kentucky Baptist, Jewish, St. Anthony's and Kosair Crippled Children's hospitals; aged 75; died, May 21, of injuries received when he fell from a sixth floor window.

Charles Sylvester Skaggs ✠ Carbondale, Ill.; Barnes Medical College, St. Louis, 1903; member of the House of Delegates of the American Medical Association from 1928 to 1938; past president of the Illinois State Medical Society and the St. Clair County Medical Society; in 1937 was appointed by the late Gov. Henry Horner as one of fifteen members of a newly created state advisory committee for the division of handicapped children of the Illinois Department of Public Welfare; aged 63; died, May 6, of cerebral hemorrhage and arteriosclerosis.

Harold Guegnon Fabien Edwards ✠ Shreveport, La.; Medical Department of Tulane University of Louisiana, New Orleans, 1911; member of the American Roentgen Ray Society, Radiological Society of North America, Inc., American Radium Society and the American College of Radiology; fellow of the American College of Physicians; member of the American Board of Radiology, Inc.; served during World War I; visiting radiologist, T. E. Schumpert Memorial Sanitarium and the Tri-State Hospital; aged 53; died, May 2, of coronary occlusion.

Clyde W. Morter ✠ Milwaukee; Wisconsin College of Physicians and Surgeons, Milwaukee, 1907; assistant clinical professor of proctology at the Marquette University School of Medicine; member of the American Proctologic Society; member of the American Board of Surgery; on the staffs of Columbia Hospital, Milwaukee County Hospital and Dispensary and Mount Sinai Hospital; consulting proctologist at the Veterans Administration Facility; aged 61; died, April 11, of influenzal encephalitis and pneumonitis.

Joseph Aloysius Meledy, Washington, D. C.; Tufts College Medical School, Boston, 1918; member of the Massachusetts Medical Society; served in the U. S. Navy during World War I and at the time of his death was a lieutenant commander in the U. S. Naval Reserve; at various times served on the staffs of the Veterans Administration facilities in Boston and Washington; aged 50; died, April 1, in the Walter Reed General Hospital of an intracranial lesion of an undetermined type and hemiplegia.

Roy L. Pierce, Mount Gilead, Ohio; Ohio Medical University, Columbus, 1896; member of the Ohio State Medical Association; for many years county health officer; formerly county coroner and member of the board of education of Mount Gilead; formerly medical examiner for the U. S. Civil Service Commission and medical examiner for the draft board in the first and second world wars; organized the Mount Gilead chapter of the American Red Cross in 1917; aged 73; died, May 3.

James A. Milligan, Garnett, Kan.; Central College of Physicians and Surgeons, Indianapolis, 1883; member of the Kansas Medical Society; member of the State House of Representatives from 1907 to 1909 and state senator from 1909 to 1911 and again from 1917 to 1919; formerly mayor of Greensburg; past president of the Santa Fe Medical and Surgical Society; aged 86; died, April 19, in the Ransom Memorial Hospital, Ottawa, of carcinoma of the gallbladder.

Earl Cunningham MacCordy ✠ St. Petersburg, Fla.; Tufts College Medical School, Boston, 1916; served during World War I; acting assistant surgeon, U. S. Public Health Service; on the staffs of the Mound Park and St. Vincent's hospitals; aged 51; died, April 5, of coronary thrombosis.

Ronald Bacon Rogers ✠ Neenah, Wis.; Columbia University College of Physicians and Surgeons, New York, 1917; served in the U. S. Navy during World War I; president of the staff of the Theda Clark Hospital; aged 50; died, April 4, in the Mercy Hospital, Oshkosh, of cirrhosis of the liver.

Bernard Milnis, North Bergen, N. J.; University of California Medical School, San Francisco, 1936; member of the Medical Society of New Jersey; on the staffs of the Christ Hospital, Jersey City, and the North Hudson Hospital, Weehawken; aged 32; died, April 19, of myelogenous leukemia.

Charles Harold Newell, Omaha; John A. Creighton Medical College, Omaha, 1908; member of the Nebraska State Medical Association; instructor in surgery at his alma mater; served during World War I; on the staff of the Nicholas Senn Hospital; aged 59; died, April 2, of coronary thrombosis.

George S. Lambert, New Rochelle, N. Y.; Columbia University College of Physicians and Surgeons, New York, 1928; member of the Connecticut State Medical Society; at one time health officer of Killingly and Danielson, Conn.; aged 41; died, April 2, of carcinoma of the liver and rectum.

Hartsford Lee Ison, Wedowee, Ala.; Southern Medical College, Atlanta, Ga., 1891; member of the Medical Association of the State of Alabama; served during World War I; aged 74; died, April 3, in a hospital at Montgomery of arteriosclerotic and hypertensive heart disease.

Francis Clement O'Malley, Plains, Pa.; Maryland Medical College, Baltimore, 1912; served with the American Expeditionary Forces in France during World War I as a captain in the medical department; aged 55; died, April 11, of chronic myocarditis.

Milton Perry McElhannon, Belton, Texas; Vanderbilt University School of Medicine, Nashville, Tenn., 1900; member of the State Medical Association of Texas; fellow of the American College of Surgeons; aged 62; died, April 20, in Houston of bronchopneumonia.

David Jackson Jacobson ✠ Bemidji, Minn.; Drake University College of Medicine, Des Moines, 1913; on the staff of the Lutheran Hospital; aged 51; died, April 17, in the Worrall Hospital, Rochester, of myocardial infarction and coronary sclerosis.

Charles W. Peek, Cedartown, Ga. (licensed in Georgia in 1889); member of the Medical Association of Georgia; served for a number of terms in the general assembly of Georgia and one term in the state senate; aged 76; died, March 1, of heart disease.

Otis Andrew Moore, Columbia, Mo.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1910; aged 53; died, April 8, in the Noyes Hospital of gastric hemorrhage.

Edward Henry Wolinski, Chicago; Loyola University School of Medicine, Chicago, 1919; member of the Illinois State Medical Society; on the staff of the Walther Memorial Hospital; aged 48; died, April 23.

Charles Day Moulton, East Orange, N. J.; University of Pennsylvania Department of Medicine, Philadelphia, 1902; aged 66; died, April 11, of arteriosclerosis, cerebral embolus and chronic myocarditis.

Peter E. Maras ✠ Jersey City, N. J.; University of Louisville (Ky.) Medical Department, 1911; on the staff of the Greenville Hospital; aged 57; died, April 6, of coronary thrombosis.

Charles Colfax McFarlin, Westport, Ind.; Kentucky School of Medicine, Louisville, 1902; served during World War I; aged 73; died, April 6, of gastroenteritis and arteriosclerosis.

Julia R. Youngman Johnson, Los Angeles; Woman's Medical College of Pennsylvania, Philadelphia, 1903; aged 67; died, March 17, of cerebral hemorrhage and hypertension.

Nelson A. Harris, Hackensack, N. J.; New York Homeopathic Medical College, New York, 1881; aged 81; died, April 9, of chronic myocarditis.

Edwin Glenn Smith, Atlantic City, N. J.; Jefferson Medical College of Philadelphia, 1888; aged 80; died, April 3, of cardiac decompensation and arteriosclerosis.

Joseph W. Neal, Scotland, Ga.; Atlanta Medical College, 1889; member of the Medical Association of Georgia; aged 76; died, March 3, of carcinoma of the prostate.

Davis W. Collins, Effingham, Kan.; Kansas City (Mo.) Medical College, 1898; member of the Kansas Medical Society; aged 67; died, March 14, of heart disease.

Guiseppe Mario Pellettieri, St. Louis (licensed in Missouri in 1915); aged 60; died, April 6, in the Bethesda General Hospital of cardiovascular disease.

Charles E. Nelthorpe, Sherwood, Mich.; Detroit College of Medicine, 1888; aged 80; died, April 4, of arteriosclerotic heart disease and diabetes mellitus.

Arthur Donald Wilson ✠ Mission, Texas; Queen's University Faculty of Medicine, Kingston, Ont., Canada, 1930; aged 38; died, April 17.

D. Westervelt Rawlings, Kansas City, Mo.; Marion-Sims College of Medicine, St. Louis, 1897; aged 77; died, April 9, of coronary sclerosis.

Mathias Aguire Serna, Crystal City, Texas; Chicago College of Medicine and Surgery, 1916; aged 63; died, March 9, of pneumonia.

Arthur Hale Gilmore, Eaton, Ohio; Rush Medical College, Chicago, 1893; aged 71; died, March 17, in Chicago of heart disease.

Hugh C. Gault, St. Clair, Mo.; St. Louis Medical College, 1882; aged 83; died, March 7, in St. Louis of ruptured aortic aneurysm.

Charles Hunter Robinson, Cullom, Ill.; Chicago College of Medicine and Surgery, 1910; aged 66; died, April 14, of uremia.

Monta Waynefort Jamison Middleton, New York; Fort Wayne (Ind.) College of Medicine, 1888; died, April 5.

Louis Willard Matthei, Chicago; Rush Medical College, Chicago, 1897; died, April 5.

DIED IN MILITARY SERVICE

Leslie Turner Bolton, Reno, Nev.; University of Tennessee College of Medicine, Memphis, 1917; served as a medical officer during World War I; at one time acting assistant surgeon in the U. S. Public Health Service; formerly on the staffs of the Veterans Administration facilities in Los Angeles, San Francisco and Reno; was called to active duty as a lieutenant colonel in the medical reserve corps of the U. S. Army Nov. 15, 1941; aged 51; died, May 2, of uremia at sea enroute to foreign duty.

Bureau of Investigation

CEASE AND DESIST ORDERS

Abstracts of Certain Federal Trade Commission Releases

The work of the Federal Trade Commission, in helping to protect the public against misrepresentation or fraud in the medical as well as other fields, has been greatly extended by the provisions of the Wheeler-Lea Amendment to the Federal Trade Commission Act. The Food, Drug and Cosmetic Act of 1938 added to the Food and Drug Administration's control of the advertising claims and statements made on the labels of medicine or on the carton or in the accompanying leaflet, whereas what might be termed collateral advertising, that which appears in newspapers and magazines and over the air, comes more actively under the purview of the Federal Trade Commission by virtue of the Wheeler-Lea Amendment.

THE JOURNAL has at various times commented on the activities of the Federal Trade Commission in this connection, even before the Wheeler-Lea Amendment gave it its added rights. In some cases the Commission may accept from the person or concern involved a stipulation that the objectionable practices or claims cited will be discontinued. In other cases the Commission issues what is known as a Cease and Desist Order, in which the individual or company cited is ordered to cease and desist from practices which have been declared objectionable. Abstracts of some of the orders issued during 1941 follow:

Caboteks.—This alleged remedy for female disorders is put out by a Charles Campbell Buttenfield Sr., trading as Dean Cabot of Pittsburgh, whose advertising represented the product as a cure or remedy or a safe and effective treatment for delayed menstruation. The Federal Trade Commission declared that the product is not safe to use, since it contains the drugs ergotin, apiol green, oil of savin and quinine sulfate in quantities sufficient to cause irreparable injury to health if used under the customary conditions or those prescribed in the advertisements. In November 1941 the Commission ordered Buttenfield to discontinue these misrepresentations and also any advertisements which fail to reveal that the use of "Caboteks" may cause gastrointestinal disturbances and other serious consequences.

"Flexible Kone" and "Dependon" Products.—These are put out by a Mrs. Anne M. Jenks of White Bear, Minn., trading as Jenks Physicians' Supplies and Dependon Products. In November 1941 the Federal Trade Commission ordered Mrs. Jenks to discontinue the following misrepresentations in her advertisements: that any preparations or devices that she sells are safe, competent or effective preventives against conception or pregnancy and effective treatments for certain female diseases. She also was ordered to discontinue any advertisements which failed to reveal that her "Flexible Kone Diaphragms" and "Felxible Kone Pessaries" cannot be worn without danger of injury and infection; or that the warning that her "Dependon Intrauterine Paste" is a caustic substance which may destroy healthy tissues and produce necrosis.

Mineral Wells Crystals.—These are put out by Mineral Wells Crystal Producers, Inc., Mineral Wells, Texas. In November 1941 the Federal Trade Commission ordered the Texas concern to discontinue certain misrepresentations in its advertising. Among these were that the product as sold to the trade is uniformly derived from mineral water obtained in its natural state from the earth in the vicinity of Mineral Wells or that, as implied by the use of the word "Certified," the product has been endorsed or attested as to quality or fitness by some governmental, scientific or other recognized agency empowered and qualified to certify to such facts, when such an endorsement has not been obtained.

Mother Nature Soap Lake Salts, Seltzer and Spirit.—These are promoted by the Soap Lake Products Corporation, Seattle. In August 1941 this concern was ordered by the Federal Trade Commission to cease representing that its nostrums when used externally will cure or benefit eczema or similar conditions, oak or ivy poisoning, athlete's foot, pyorrhea or stomach trouble, or when taken internally will prevent or cure various rheumatic conditions, gangrene or Buerger's disease, or offer anything more than temporary relief for any of the disorders named. In April 1939 the Commission had issued a similar order against the same concern.

Parkelp.—This was a dehydrated kelp product put out in two forms known as "Glandular Parkelp" and "Parkelp Tablets." In at least five instances the Food and Drug Administration seized shipments of Parkelp and declared the product to be misbranded under the Pure Food and Drugs Act because the amounts of minerals it contained were misrepresented or because of fraudulent therapeutic claims on the labels. Government chemists reported Parkelp to consist essentially of plant material (chiefly kelp) containing chlorine, potassium, sodium, calcium, phosphorus, iron and some other minerals. In July 1941 the Federal Trade Commission ordered Philip R. Park, Inc., San Pedro, Calif., to discontinue advertisements which represent that Parkelp has any therapeutic value beyond that afforded by its iodine content; that it contains iron, copper, calcium, phosphorus, sodium, potassium, magnesium, sulfur or other minerals in quantities sufficient to have therapeutic value in treating or preventing diseases or conditions resulting from a deficiency in such minerals, or that it will build resistance to mineral deficiency diseases or furnish food minerals other than iodine in quantities sufficient to be of value in combating mineral deficiency diseases; or that Parkelp contains minerals which are not present in land foods or that the average diet is deficient in the materials necessary for proper functioning and health of the body.

Rex Perio Pills.—This was put out by a Louis Podrofski of Chicago, who operated under the name Rex Drug Company. Analysis showed the product to contain ergotin, extract of black hellebore, aloes and oil of savin in quantities sufficient to cause serious and irreparable injury to health if used as directed in the advertisements. In July 1941 the Federal Trade Commission issued a cease and desist order against Louis Podrofski and the Rex Drug Company individually, directing them to cease disseminating any advertisements which would represent that their nostrum is a safe and effective treatment for delayed, scanty and painful menstruation or any which would fail to reveal that the use of Rex Perio Pills may cause gastrointestinal disturbances and excessive congestion and hemorrhage of the pelvic organs and, in cases of pregnancy, may result in cases of uterine infection and blood poisoning.

Sterline's Combination Home Treatment.—This group of products, put out for the treatment of asthma by W. K. Sterline, Sidney, Ohio, includes three nostrums, sometimes known as "Sterline's Asthma Compound," "Sterline's Bronchial Elixir" and "W. K. Sterline's Korana Powder." According to the Federal Trade Commission, one of the ingredients is sodium bromide, the use of which over a long period may cause rash and mental derangement. The Commission further found that the Sterline products have no generally recognized value in the treatment of asthma or bronchitis, and, in September 1941, ordered W. K. Sterline and Mumm, Romer, Robbins & Pearson, Inc., Columbus, Ohio, the agency that handles Sterline's advertising, to cease representing that these mixtures, when used separately or in any combination, are a cure or remedy for asthma or bronchitis, and to discontinue any advertisements for "W. K. Sterline's Compound" which fail to reveal that this preparation should not be used by persons suffering from active or latent tuberculosis, lest it cause mental derangement. The defendants were permitted to omit this warning, however, if their advertisements included the statement, "Caution, use only as directed on the label." It is interesting to note that in July 1937 W. K. Sterline had signed a stipulation in which he had promised the Federal Trade Commission that in the sale of his asthma treatment he would no longer represent that it would remove the cause of asthma or hay fever or offer any more than temporary relief of the symptoms, nor would he state either directly or by inference that the use of it was safe, unless he explained that it was not intended for persons having tuberculosis.

Thorson's Soap Lake Products.—Under this brand name one Roxie Thorson, trading as Thorson's Soap Lake Products Company, Soap Lake, Wash., puts out "Salts," "Effervescent Soap Lake Salts," "Liniment," "Skin-Aid Soap Lake Ointment," "Shampoo" and "Skin-Aid Soap Lake Soap." In August 1941 the Federal Trade Commission ordered Roxie Thorson to cease representing that these preparations are a cure, remedy or competent treatment for a long list of disorders, among which are diabetes, blood diseases, psoriasis, pyorrhea, Buerger's disease, gangrene, women's ailments, rheumatism, dropsy, high blood pressure, arthritis and a good many others. In January 1939 the Commission had issued a similar order against the names Roxie Thorson and Thorson's Soap Lake Products Company. Still earlier, in July 1930 and October 1931, shipments of Thorson's Soap Lake Salts had been declared in district federal courts to be misbranded under the Pure Food and Drugs Act because of fraudulent claims made for the product in or on the trade packages. In connection with one of these cases the government chemists had reported that the product essentially contained 50 per cent of sodium carbonate, 25 per cent of sodium sulfate (Glauber's salt) and 10 per cent of sodium chloride, with smaller amounts of other salts and 13 per cent of moisture.

Triple X Relief Compound and Perio Pills.—The latter also was known as "Reliable Perio Compound" and "Perio Relief Compound," and both preparations were sold by one Earl Aronberg of Chicago, doing business as Positive Products Company and Rex Products Company. In September 1941 the Federal Trade Commission ordered Aronberg to discontinue any advertisements which represented that his preparations are effective remedies or treatments for delayed menstruation or are safe to use; or which failed to reveal that the use of these mixtures might cause gastrointestinal disturbances and severe toxic and circulatory conditions, and, in the case of pregnancy, might produce violently poisonous effects on the system.

Wroblewski Nostrums.—These are distributed by one D. Stefan Wroblewski, operating under various trade names, and by three corporations, D. W. Wroblewski, Inc., D. Wroblewski and Company, Ltd., and Daferu Drug Company, Inc., all of Brooklyn. In July 1941 the Federal Trade Commission ordered these respondents to discontinue misrepresentations in the advertising of a long list of nostrums, mostly sold under Polish names. The order particularly played up one product known as "Wuzi-Wuzi" and directed the respondents to discontinue advertisements which represent it as harmless or which fail to contain a warning against its frequent and continued use and excessive dosage, or at least to caution the user that it should be taken only as directed on the label, when the label contains proper cautionary directions. The Commission's order also prohibited use of the words "Laboratories" and "Doctor" or "Dr." when the latter refers to D. Stefan Wroblewski, who, according to findings, is not a physician. Also banned were testimonials which purport to have come from the respondents' customers but which in fact were prepared by the promoters themselves.

Correspondence

SURGERY IN CANCER OF THE PROSTATE

To the Editor:—An opinion expressed in THE JOURNAL, March 7, page 855, in answer to a query from a doctor in California is entirely false and is not held, I am sure, by a majority of urologists.

Carcinoma of the prostate differs from carcinoma elsewhere in the body in no particular respect so far as treatment is concerned except for the newer procedures of diethylstilbestrol and castration. An early diagnosis of carcinoma of the prostate can and has been repeatedly made, and when made by the urologist trained to do radical prostatectomy, it can and has been repeatedly cured. The problem is one of early diagnosis, and this has been made and confirmed when the lesion is not larger than 1 cm. in diameter.

In these cases, confirmation has usually been made by frozen section after perineal exposure, and if after such biopsy the presumptive clinical diagnosis has been proved false the perineum can be closed and no harm done. This procedure is now a recognized routine in all well trained urologic centers.

Confirmation of the suspicion of cancer of the prostate is so easily made by rectal palpation that an early diagnosis has even a better chance of being made than in cancer of internal organs that are beyond the reach of palpation. For years well trained urologists have told of the wisdom of routine rectal examinations for this reason more than any other. I can cite the cure of more than 20 patients with early carcinoma of the prostate from my own practice.

The difference of opinion arises from the failure of urologists such as the one who answered the query in THE JOURNAL to recognize the difference between early and late cancer. His remarks apply only to the latter.

FRANK HINMAN, M.D., San Francisco.

To the Editor:—It appears to me that the statement in the March 7 issue of THE JOURNAL (in the department of Queries and Minor Notes) regarding carcinoma of the prostate to the effect that "It is the opinion among urologists that once the clinical diagnosis of carcinoma of the prostate has been made it is technically impossible to do any sort of surgical procedure that would effect a cure" is an unfortunate one. It seems to me an error to dismiss in such a cavalier fashion the not infrequent series of promising results of total prostatectomy in cases in which early diagnosis is not missed because of lack of awareness or suspicion of the nature of isolated hard areas in the prostate. As I see it, the chief problem about cancer of the prostate is that of making the physician who is not a urologist suspicious of what he feels on a carefully done rectal examination.

J. GORDON SCANNELL, M.D., Charles River, Mass.

To the Editor:—In THE JOURNAL, March 7, page 855, is a statement with regard to cancer of the prostate. This statement is untrue, and I seriously object to having it go unchallenged, because there is no question of the fact that many patients with early carcinoma in our clinic have been cured by total radical perineal prostatectomy and seminal vesiculectomy, and I know that this is true in several other clinics. I hope that you will do what you can to correct this misstatement.

The thing to be encouraged is that every male patient over 50 should have a rectal examination done; if there is a suspicious nodule present the patient should be sent to a competent urologist, who will proceed to take a biopsy, and if proved to be positive the biopsy should be followed by a total perineal prostatectomy and seminal vesiculectomy after the method proposed by Young many years ago or by this operation as modified by ourselves.

O. S. LOWSLEY, M.D., New York.
Director, Department of Urology, James Buchanan Brady Foundation.

To the Editor:—The answer that "once the diagnosis of carcinoma of the prostate has been made, the condition is no longer surgical" is grossly in error. Statistics prove conclusively that carcinoma of the prostate has been cured in a considerable percentage of the cases by a radical operation in which the entire prostate with a portion of the vesical neck, the seminal vesicles and ampullae of the vasa deferentia have been removed with their fascial coverings in one piece. We have been assiduous in following all patients on whom our operation has been carried out. Some are still well from ten to twenty-six years after leaving the hospital. A meticulous analysis indicates that more than 40 per cent of the patients followed five years or longer after leaving the hospital have shown no evidence of recurrence or metastasis. That in rare instances metastases may become apparent after a longer period than five years cannot be denied; in fact, in a series of 100 patients there were 2 patients thought to be well who showed evidence of metastasis, one nine years and the other fifteen years after the radical operation.

In some cases in which the presence of carcinoma has been recognized by a very hard nodule in the posterior lobe of the prostate cures have been obtained by the removal of only one half of the prostate and the seminal vesicle above it. In other cases in which a considerable portion of the prostate was involved but the carcinoma had not passed beyond the capsule and surrounding fascias the radical operation has resulted in a complete cure, in many cases followed from five to twenty years.

Sir William Osler used to urge that a rectal examination be included in every physical examination. If such was the rule and practitioners realized that carcinoma always should be suspected when a definitely indurated area is found in the prostate, many patients could be subjected to a perineal operation in which the diagnosis could be confirmed and a radical cure obtained if carcinoma were found present.

Other clinics have confirmed my assertion that in well chosen cases carcinoma of the prostate may be cured by radical operation and definitely refute the assertion that "once the diagnosis of carcinoma has been made the condition no longer is surgical." In fact, with the radical operation performed fairly early the prognosis is excellent.

HUGH H. YOUNG, M.D., Baltimore.

NOTE.—These letters were referred to the urologist who wrote the reply. He comments:

To the Editor:—The question was What is the surgical treatment of malignant neoplasms of the prostate? This question implies, to me at least, that the diagnosis is obvious and that it is clinically made. The answer was that once a clinical diagnosis of carcinoma of the prostate has been made it is technically impossible to do any sort of surgical procedure that would effect a cure. Any one familiar with urologic conditions knows of the well recognized methods of perineal exposure and prostatic biopsy in suspicious cases, but not in clinically obvious carcinoma of the prostate. With conditions not readily diagnosable by palpation or any other well recognized clinical method a patient should, if properly managed, be subjected to perineal exposure of the prostate, prostatic biopsy and frozen section study. The procedure from there on is determined by the results of the microscopic study of that section. If the result is positive for carcinoma, the diagnosis is not a clinical one but microscopic, and it is from this group that successes may be expected following radical perineal prostatectomy. All comments received dwelt on that particular phase of the subject which, as far as I am concerned, had nothing to do with the question submitted.

FATAL PULMONARY EMBOLISM FOLLOWING VARICOSE VEIN INJECTION

To the Editor:—Drs. Vaughn and Lees have contributed much to medical science by publishing and evaluating a case of "Fatal Pulmonary Embolism Following Varicose Vein Injection" (THE JOURNAL, April 11, p. 1293). They deserve the highest appreciation for their honesty and courage.

The mechanism of occlusion of the vein after the injection of different obliterating solutions has been studied microscopically by many authors (McPheeters, H. O.: Injection Treatment of Varicose Veins, Philadelphia, F. A. Davis Company, 1938, chapter 29, pp. 133-145). It requires several days' time from the onset of the injury of the endothelial lining of the varicose vein to the point at which the whole lumen of the vein is tightly filled with a well attached thrombus. As a rule, after the injection of the sclerosing solution not the entire endothelial lining of the vein is injured uniformly. Islands of destroyed endothelium have been found with stratified thrombi, attached to the wall of the injured vein, next to spaces of intact intima with loosely adherent blood clots. The organization of the whole thrombotic masses usually begins at the end of the first week after treatment, with the growth of fibroblasts and capillaries into them. Furthermore, the extent of the effectiveness of an obliterating injection cannot be fully determined for a week after treatment, as one may encounter cases of progressive obliteration. Keeping this fact in mind, together with the pathologic condition of the obliterated vein, an additional possible reason for the case of fatal embolism is evident.

Three injections of sodium morrhuate had been given into the same vein on three consecutive days and a fourth injection was given on the fifth day. It is unlikely that there had been complete obliteration of the vein on the second, third or fifth day after the treatment was started. Had obliteration been complete after the first injection, the same vein should not have been injected again. However, partial obliteration might well have occurred following one of these injections, and the insertion of the needle and subsequent injection of sclerosing fluid into the incomplete thrombus may well have loosened a small blood clot which floated toward the heart or lung and caused the lethal embolism. This consideration strongly suggests the advisability of allowing a lapse of time between injections, and the majority of authors do not recommend treatments at less than weekly intervals.

Another possible cause of embolism is the injection of too small an amount of sclerosing solution with too little resultant injury to the intima. Sodium morrhuate 5 per cent cannot be considered as a powerful solution, and 1.5 cc. is a small amount, as noted in an experimental study published from the Skin and Cancer Unit, New York Post-Graduate Medical School and Hospital (*Arch. Dermat. & Syph.* **42**:86 [July] 1940). According to Paul Linser, one of the originators of injection therapy for varicose veins, the proper solution for such treatment must possess "the necessary energy to injure the vein wall" (*München. med. Wchnschr.* **79**:1598 [Sept. 30] 1932). One should try to provoke a pronounced reaction with the first injection. Extensive injury to the intima guarantees a proper anchorage of the thrombus on the wall of the vein and minimizes the formation of blood clots within the area of thrombus formation, thus reducing the possibility of embolism. During the first years of injection treatment of varicose veins fatal accidents were attributed to the lack of effectiveness of the injected solutions or to faulty technic (*München. med. Wchnschr.* **79**:1969 [Dec. 2] 1932).

When one reviews the 61 cases of embolism compiled by Drs. Vaughn and Lees, sodium morrhuate with 15 listed cases ranks first, while quinine-urethane follows. In the majority of cases the injections had been given at short intervals.

In addition to the conclusions of Drs. Vaughn and Lees, the following rules governing the treatment of varicose veins should be observed:

1. Injections should not be given at less than weekly intervals.
2. A sufficiently large amount of a solution strong enough to produce extensive damage to the intima should be employed.
3. Because of publications about allergic reactions following the injection treatment of varicose veins with sodium morrhuate, including several of our own cases of severe shock (*New York State J. Med.* **37**:1506 [Sept. 1] 1937) we replaced sodium morrhuate successfully four years ago by the use of a sugar solution of high concentration and high viscosity (*M. Rec.* **147**:307, 1938) and therefore recommended its adoption. With its use the results of treatment have been excellent and no untoward reactions have been noted. Furthermore, the results obtained reduced the total number of injections necessary in each case. The cramping pain occurring during the action of the injected sugar solution did not discourage our patients because they felt recompensed on contrasting the results obtained from other solutions previously used.

EUGENE F. TRAUB, M.D.
LUDWIG ISAAK, M.D.
New York.

TUBERCULOSIS AMONG MEDICAL STUDENTS

To the Editor:—In the May 16 issue of THE JOURNAL, page 266, there is in an editorial comment on "Tuberculosis Among Medical Students" one statement of which should be corrected: "It must be recognized likewise that periodic x-ray examination is the only sure method of recognition of the disease."

It would have been much better to state that x-ray examination is of value in the detection of pulmonary tuberculosis, for there is, of course, no method that can be called a sure method for diagnosing tuberculosis or any other disease. I have seen many patients who had pulmonary tuberculosis and tuberculosis of the hilar lymphatic nodes with ulceration into a bronchus, and roentgenoscopic examination did not reveal evidence of a pulmonary lesion; on the other hand, there are many infiltrations in the lung that have been diagnosed tuberculosis from roentgenoscopic study when the lesion was nontuberculous.

I think it is unfortunate that the medical profession at large and roentgenologists in particular have developed an idea that roentgenoscopy is the final word in diagnosis. I am sure that the entire profession recognizes the great value of roentgenoscopic study, but to attribute unfailing accuracy to any method of examination is an unfortunate mistake.

PORTER P. VINSON, M.D., Richmond, Va.

"CLINICAL ROENTGENOLOGY OF PREGNANCY"

To the Editor:—Please be advised that the reviewer's statement regarding my book that a good number of the one hundred and nineteen illustrations had been "touched up" is not sufficiently clear. None of the photographs or reproductions were retouched.

The differentiation of the soft tissues of pregnancy were elicited by relative overexposure of the film and the use of a very bright spotlight later. This is becoming a common and useful practice in many branches of roentgenology.

The reviewer evidently considered the superimposed guidelines on the pelvimetry photographic reproductions as "touched up." To these he took objection. However, it is my carefully considered opinion that these guidelines are absolutely essential for the reader if the book is to be used as a working manual for practicing measurements on these illustrations.

WILLIAM SNOW, M.D., New York.

Medical Examinations and Licensure

COMING EXAMINATIONS AND MEETINGS

ANNUAL CONGRESS ON MEDICAL EDUCATION AND LICENSURE

CHICAGO, Feb. 15-16, 1943. Sec., Council on Medical Education and Hospitals, Dr. H. G. Weiskotten, 535 North Dearborn Street, Chicago.

NATIONAL BOARD OF MEDICAL EXAMINERS EXAMINING BOARDS IN SPECIALTIES

Examinations of the National Board of Medical Examiners and Examining Boards in Specialties were published in THE JOURNAL, June 13, page 583.

BOARDS OF MEDICAL EXAMINERS

ARIZONA: * Phoenix, July 7-8. Sec., Dr. J. H. Patterson, 826 Security Bldg., Phoenix.

CALIFORNIA: *Written.* San Francisco, June 29-July 2. *Oral examination* (required when reciprocity application is based on a state certificate or license issued ten or more years before filing application in California), Los Angeles, Sept. 16. Sec., Dr. Charles B. Pinkham, 1020 N St., Sacramento.

COLORADO: * Denver, July 7-10. Application must be on file not later than June 21. Sec., Dr. George R. Buck, 831 Republic Bldg., Denver.

CONNECTICUT: * *Medical,* Hartford, July 14-15. *Endorsement.* Hartford, July 28. Sec. to the Board, Dr. Creighton Barker, 258 Church St., New Haven. *Homeopathic.* Derby, July 14-15. Sec., Dr. Joseph H. Evans, 1488 Chapel St., New Haven.

DELAWARE: Dover, July 14-16. Sec., Medical Council of Delaware, Dr. Joseph S. McDaniel, 229 S. State St., Dover.

DISTRICT OF COLUMBIA: * Washington, Nov. 9-10. Sec., Commission on Licensure, Dr. George C. Ruhland, 6150 East Municipal Bldg., Washington.

FLORIDA: * Jacksonville, June 22-23. Sec., Dr. William M. Rowlett, Box 786, Tampa.

GEORGIA: Atlanta and Augusta, June. Sec., State Examining Boards, Mr. R. C. Coleman, 111 State Capitol, Atlanta.

HAWAII: Honolulu, July 13-16. Sec., Dr. James A. Morgan, 55 Young Bldg., Honolulu.

ILLINOIS: Chicago, Oct. 13-15. Superintendent of Registration, Mr. Philip M. Harman, Department of Registration and Education, Springfield.

MAINE: Augusta, July 7-8. Sec., Dr. Adam P. Leighton, 192 State St., Portland.

MASSACHUSETTS: Boston, July 14-17. Sec., Dr. H. Q. Gallupe, 413-F State House, Boston.

MISSISSIPI: Jackson, June 24-25. Assistant Sec., State Board of Health, Dr. R. N. Whitfield, Jackson.

MONTANA: Helena, Oct. 6. Sec., Dr. Otto G. Klein, First National Bank Bldg., Helena.

NEVADA: *Reciprocity.* Carson City, Aug. 3. Sec., Dr. Frederick M. Anderson, 215 N. Carson St., Carson City.

NEW HAMPSHIRE: Concord, Sept. 10-11. Sec., Board of Registration in Medicine, Dr. T. P. Burroughs, State House, Concord.

NEW MEXICO: * Santa Fe, Oct. 13-14. Sec., Dr. LeGrand Ward, 135 Sena Plaza, Santa Fe.

NEW YORK: Albany, Buffalo, New York and Syracuse, June 22-25. Chief, Bureau of Professional Examinations, Mr. Herbert J. Hamilton, 315 Education Bldg., Albany.

NORTH CAROLINA: Raleigh, June 22. Sec., Dr. W. D. James, Hamlet.

NORTH DAKOTA: Grand Forks, July 7-10. Sec., Dr. G. M. Williamson, 4½ S. Third St., Grand Forks.

OHIO: *Endorsement.* July 7. Sec., Dr. H. M. Platter, 21 W. Broad St., Columbus.

OREGON: * Portland, July 22-24. Application must be on file not later than July 9. Exec. Sec., Miss Lorienne M. Conlee, 608 Failing Bldg., Portland.

PENNSYLVANIA: Philadelphia and Pittsburgh, July 7-11. Act. Sec., Bureau of Professional Licensing, Mrs. Marguerite G. Steiner, 358 Education Bldg., Harrisburg.

RHODE ISLAND: * Providence, July 2-3. Chief, Division of Examiners, Mr. Thomas B. Casey, 366 State Office Bldg., Providence.

SOUTH CAROLINA: Columbia, June 22-24. Sec., Dr. A. Earle Boozer, 505 Saluda Ave., Columbia.

SOUTH DAKOTA: * Pierre, July 21-22. Dir., Medical Licensure, Dr. J. F. D. Cook, State Board of Health, Pierre.

UTAH: Salt Lake City, June 29-30. Assistant Dir., Department of Registration, Mr. G. V. Billings, 324 State Capitol Bldg., Salt Lake City.

WEST VIRGINIA: Charleston, July 6-8. Commissioner, Public Health Council, Dr. C. F. McClintic, State Capitol, Charleston.

WISCONSIN: * Milwaukee, June 30-July 3. Sec., Dr. H. W. Shutter, 425 E. Wisconsin Ave., Milwaukee.

* Basic Science Certificate required.

BOARDS OF EXAMINERS IN THE BASIC SCIENCES

DISTRICT OF COLUMBIA: Washington, Oct. 19-20. Sec., Commission on Licensure, Dr. George C. Ruhland, 6150 East Municipal Bldg., Washington.

IOWA: Des Moines, July 14. Dir., Division of Licensure & Registration, Mr. H. W. Grefe, Capitol Bldg., Des Moines.

NEBRASKA: Lincoln, Oct. 6-7. Dir., Bureau of Examining Boards, Mrs. Jeannette Crawford, 1009 State Capitol Bldg., Lincoln.

OKLAHOMA: Oklahoma City, May, 1943. Sec., Dr. Oscar C. Newman, Shattuck.

OREGON: Corvallis, July 11. Application must be on file not later than June 24. Sec., Mr. Charles D. Byrne, University of Oregon, Eugene.

RHODE ISLAND: Providence, Aug. 19. Chief, Division of Examiners, Mr. Thomas B. Casey, 366 State Office Bldg., Providence.

North Dakota January Report

The North Dakota State Board of Medical Examiners reports the written examination for medical licensure held Jan. 6-9, 1942. The examination covered 13 subjects and included 100 questions. Four candidates were examined, 3 of whom passed and 1 failed. Two physicians were licensed to practice medicine by reciprocity and 3 physicians so licensed by endorsement. The following schools were represented:

School	PASSED	Year Grad.	Number Passed
Harvard Medical School		(1940)	1
University of Minnesota Medical School		(1940)	1
Temple University School of Medicine		(1940)	1

School	FAILED	Year Grad.	Number Failed
Loyola University School of Medicine		(1939)	1

School	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
State University of Iowa College of Medicine		(1937)	Iowa
Washington University School of Medicine		(1935)	Missouri

School	LICENSED BY ENDORSEMENT	Year Grad.	Endorsement of
Northwestern University Medical School		(1930)	U.S.P.H.S.
University of Minnesota Medical School		(1931)	N. B. M. Ex.
University of Pennsylvania School of Medicine		(1940)	N. B. M. Ex.

Bureau of Legal Medicine and Legislation

MEDICOLEGAL ABSTRACTS

Malpractice: Liability of Physician for Alleged Negligence in Treatment of Burns.—In January 1934 the plaintiff was severely burned on her face, neck, arms and legs by an explosion in one of the chemical rooms of the Standard Oil Company. She was immediately taken to the company's first aid station and later the same day was removed to a hospital in Casper, where she was treated by the defendant, a physician employed by the Standard Oil Company. Among other treatment given, the burned areas were sprayed with tannic acid and later with mercurochrome and petrolatum. On June 26, 1934 the plaintiff was taken to Chicago and placed in the care of the defendant's brother, medical director of the Standard Oil Company. She remained in Chicago until about the first of September, during which time about two hundred skin grafting operations were performed. The plaintiff then returned to Casper, where she remained under the defendant's care until he was discharged in June 1936. When she returned from Chicago, her feet and legs were crooked and a drop in her left foot had developed which prevented her from placing her left heel on the ground. The right leg was finally straightened, but little could be done for the left because of the extreme tenderness of the burned areas. The plaintiff subsequently sued the defendant for malpractice. At the time of the trial the motion of the plaintiff's left foot and left arm was very limited, and she was unable to walk without the aid of crutches. At the close of all the evidence, the defendant made a motion for a directed verdict in his favor. The motion was sustained and judgment entered thereon. The plaintiff then appealed to the Supreme Court of Wyoming.

On appeal the plaintiff contended that the trial court, in passing on the motion for a directed verdict, should have considered only the plaintiff's evidence and such of the defendant's evidence as was favorable to the plaintiff, together with all fair inferences therefrom. The defendant argued that the trial court had the right and duty to consider all the evidence introduced. The Supreme Court indicated that the plaintiff's contention was probably correct in most ordinary actions but held that a different rule applies in malpractice cases. In many instances, the court pointed out, a physician is required to choose one of two or more equally acceptable methods of treating a particular condition. Where there is a fundamental difference of opinion among physicians, the court said it would be unfair to permit a jury with no special training at all to decide a matter on which the profession itself had been unable to agree. In *Harris v. Schoonmaker,* a malpractice case, 50 Wyo. 119, 58 P. (2d) 415, 60 P. (2d) 360, the Supreme Court of Wyoming said that

"it is assuredly the duty of the court to survey the entire evidence in the case, where, as here, a motion to direct a verdict was made after the evidence of the parties had all been introduced. If this is not done, an unjust and inaccurate result might easily be reached." The court therefore concluded in the present case that if the act or omission of a competent physician or surgeon, on which a claim of negligence in a malpractice case is predicated, clearly involves and constitutes the exercise of an honest judgment, arrived at after careful and necessary investigation and approved by a respectable portion of competent and reputable men of the same school of medicine, and there is nothing, in the judgment of the trial judge, to indicate that the approval is not honestly made or that it or the act or omission is unreasonable, or that special circumstances or facts would make it fairer to submit the case to the jury, then it is not error to direct a verdict for the defendant.

The plaintiff's major contention concerning the defendant's conduct was that there had been an unnecessary delay in performing the skin grafting, that it should have been done in March or April rather than in July. The undisputed testimony of all the physicians who appeared as witnesses was that skin grafting should be done as soon as the condition of the wound and of the patient permits. The hospital chart showed that, during nearly all the time until the plaintiff was taken to Chicago, her pulse rate ranged between 90 and 100 and her temperature varied between 100 and 103 F. The plaintiff's condition was also indicated by the fact that on her trip to Chicago she had to be accompanied by her mother, a nurse and a physician, and she had to be lifted out of the Pullman car through a window. The plaintiff's evidence, as well as that of the physicians who testified on behalf of the defendant, was to the effect that the time to perform a skin grafting operation is largely a matter for the professional judgment of the attending physician. The Supreme Court therefore concluded that, in view of the obvious physical condition of the plaintiff during the time in question, the plaintiff had not made any showing that the defendant had negligently delayed the skin grafting operation.

The plaintiff also complained of the way her left arm was treated and contended that another method would not have left it with limited motion. The evidence showed that the arm was bandaged every day and then placed on a pillow on the plaintiff's chest and the defendant said that he exercised the arm as much as possible to keep it from getting stiff. The plaintiff's expert testified that it was not good practice to let the arm rest on the chest—that it should have been kept straight along the body, in splint or on a board. Both the plaintiff's witness and the defendant admitted that the scar tissue would be stiff. The difference seemed to be that, if the arm was to be stiff, the plaintiff's witness wanted it extended and the defendant wanted it bent. Since the stiffness of the arm was in the shoulder, not the elbow, however, the court held that the foregoing testimony was in no way material. Again the Supreme Court held that the way the arm was placed was a matter of professional judgment and that no negligence was shown.

Likewise the plaintiff contended that a different treatment would have prevented the foot drop. It was admitted that muscles destroyed by burns cannot be restored, but the plaintiff's expert indicated that the cause of the foot drop was the treatment received by the plaintiff before going to Chicago and stated that only a foot not properly supported will drop. The evidence showed, however, that while in the hospital the plaintiff's left heel had been supported by a "doughnut" and that by the use of pillows held in place by sand bags the foot had been kept in an upright position at all times. Since the drop did not occur before the plaintiff went to Chicago, the Supreme Court concluded that the defendant had not been negligent. Furthermore, there was no medical testimony of any want of care after the plaintiff's return home. The plaintiff argued, however, that since the defendant's brother had been selected by the defendant to perform the operation he was, in effect, the defendant's agent, and the defendant was liable for his negligence. The court held that a physician who merely arranges for an operation by another not his associate, employer or employee and lends casual assistance at the operation is not jointly liable for the negligence of the operating physician.

The Supreme Court further held that the plaintiff's argument to the effect that the defendant had admitted his own incompetence by advising the plaintiff to go to Chicago for treatment could not be sustained, saying:

> If it were valid, we fear that every physician who recommends that his patient should go to Mayo's, to Chicago, to Denver, or any other place, would thereby show that he is incompetent, and knowledge of that fact would thereby be conveyed to every one who participated in sending the patient away. A great number of the physicians in this state would, we fear, if the argument were true, stand convicted of incompetence, since scores are sent away from time to time to have the care of some other physician in larger cities.

After reviewing the evidence in detail, the Supreme Court concluded that the trial judge was justified in directing a verdict for the defendant. The judgment for the defendant was accordingly affirmed.—*Smith v. Beard, 110 P. (2d) 260 (Wyo., 1941).*

Pharmacy Practice Acts: Right of State Board of Pharmacy to Establish Educational Requirements.—The pharmacy practice act of Nevada, passed in 1913, provides that "Licentiates in pharmacy must be such persons as possess the fundamentals of a high school education and who have had at least five (5) consecutive years' actual experience in drug stores where the prescriptions of medical practitioners have been compounded, and who have passed a satisfactory examination before the state board of pharmacy. . . ." In January 1939 a bill was introduced in the Nevada assembly proposing, among other things, that every applicant for examination and registration as a pharmacist must be a graduate of a college of pharmacy recognized and approved by the Nevada state board of pharmacy after having received at least four years of pharmaceutical training and must pass an examination given by the Nevada state board of pharmacy. The bill was not enacted, but on May 25, 1939 the state board of pharmacy undertook to impose, by resolution, the educational requirements for licensure proposed by the bill. Thereafter, the petitioner applied to the board for permission to take an examination to become a licentiate in pharmacy. The application was denied because it did not show that the petitioner had received four years of training in a college of pharmacy. The petitioner then filed an original mandamus proceeding in the Supreme Court of Nevada against the board, asking that the court direct the board to accept his application for an examination.

If the legislature, said the court, instead of fixing the standards of education and experience for licentiates, had employed language purporting to confer full and complete authority on the board of pharmacy to establish such standards, it would then be necessary for the court to decide whether the legislature could lawfully delegate such power to the board. The fact, however, that the legislature itself saw fit to establish such standards evidenced a legislative intent to reserve that power to itself and not to confer on the board the authority either to diminish or to add to the standards. The court admitted the importance of requiring that pharmacists possess such qualifications as the public safety demands but said that if higher qualifications than those prescribed are desirable the legislature has full power to impose them. The board was therefore ordered to examine the petitioner.—*Estes v. State Board of Pharmacy, 111 P. (2d) 48 (Nev., 1941).*

Society Proceedings

COMING MEETINGS

American Association for the Study of Neoplastic Diseases, Baltimore, June 25-27. Dr. Eugene R. Whitmore, 2139 Wyoming Ave. N.W., Washington, D. C., Secretary.

American Physiotherapy Association, Lake Geneva, Wis., June 28-July 3. Miss Evelyn Anderson, Stanford University, Calif., Secretary.

Maine Medical Association, Poland, June 21-23. Dr. Frederick R. Carter, 142 High Street, Portland, Secretary.

Minnesota State Medical Association, Duluth, June 29-July 1. Dr. B. B. Souster, 493 Lowry Medical Arts Bldg., St. Paul, Secretary.

Montana, Medical Association of, Missoula, July 8-10. Dr. Thomas F. Walker, 206 Medical Arts Bldg., Great Falls, Secretary.

New Mexico Medical Society, Santa Fe, June 25-28. Dr. L. B. Cohenour, 221 W. Central Avenue, Albuquerque, Secretary.

West Virginia Medical Association, White Sulphur Springs, July 13-15. Mr. Charles Lively, 1031 Quarrier St., Charleston, Executive Secretary.

Current Medical Literature

AMERICAN

The Association library lends periodicals to members of the Association and to individual subscribers in continental United States and Canada for a period of three days. Three journals may be borrowed at a time. Periodicals are available from 1932 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 18 cents if three periodicals are requested). Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American Heart Journal, St. Louis

23:291-440 (March) 1942

*Further Studies in Immunization Against Rheumatic Fever. V. P. Wasson and E. E. Brown, New York.—p. 291.

*Induced Anoxemia Test: Study by Age Groups. C. T. Burnett, M. G. Nims and C. J. Josephson, Denver.—p. 306.

Method for Perfusion of Rabbits' Ears and Its Application to Study of Renin-Angiotonin Vasopressor System, with Note on Angiotonin Tachyphylaxis. I. H. Page, Indianapolis.—p. 336.

Value of Carbon Dioxide Baths in Treatment of Peripheral Vascular Disease and Allied Conditions. I. D. Stein and I. Weinstein, New York.—p. 349.

Central Nervous System Manifestations in Acute Myocardial Infarction. W. B. Bean and C. T. Read, Cincinnati.—p. 362.

Quantitative Measurement of Reactive Hyperemia in Human Skin: Individual and Seasonal Variations. J. R. Di Palma, Brooklyn; S. R. M. Reynolds, Baltimore, and Frances I. Foster, Brooklyn.—p. 377.

Pathologic Physiology of Circulation in Acute Thrombophlebitis and Post-Thrombotic Syndrome. J. R. Veal and H. H. Hussey, Washington, D. C.—p. 390.

Blood Pressure Studies on Negro and White Men and Women Living in Virgin Islands of United States. G. M. Saunders and Huldah Bancroft, Cleveland.—p. 410.

Immunization Against Rheumatic Fever.—After eight years of immunizing 101 ambulatory patients suffering from rheumatic heart disease with graduated injections of hemolytic streptococcus filtrate, Wasson and Brown state that the patients have shown a striking reduction in the number of recurrences and decided improvement in health. Many patients have been observed for as long as six years since injections were discontinued and their health is materially better than that of untreated patients. Bacteriologic study shows that infections of the upper part of the respiratory tract would develop but would be of short duration and would seldom be followed by a flare-up of rheumatic fever. As the protracted prophylactic treatment has drawbacks, an abbreviated method of immunization was tried on 42 children in 1941; the total skin test doses was given in four, instead of thirty-eight, inoculations intradermally three weeks apart. The number of reported colds per child was greatly reduced, the mean gain in weight per child was 7½ pounds (3.4 Kg.) in nine months, there were few subacute rheumatic symptoms and a fresh attack of rheumatic fever developed in only 2 patients: in 1 who has both congenital and rheumatic heart disease and is chronically decompensated and in another who at the outset had a moderate chorea and showed no improvement. Only prolonged observation will demonstrate whether the results of this form of treatment are as lasting as those of protracted treatment.

Induced Anoxemia Test.—Burnett and his co-workers subjected 125 normal persons free from cardiovascular disturbances to anoxemia induced by inhalation of a 10 per cent mixture of oxygen. Electrocardiography before and after anoxemia led them to believe that there is a usual, or "normal," response consisting of practically no symptoms, but of certain rather definite changes in the electrocardiographic pattern which are promptly reversed by the inhalation of 100 per cent oxygen. There was no significant difference in the electrocardiographic response in the different decades of life. However, they have encountered "abnormal" responses (suggesting coronary artery insufficiency) in 19.2 per cent of normal subjects and "normal" responses in abnormal subjects too frequently to justify the continued use of the test in its present form for clinical diagnosis. The belief that some degree of coronary artery change is associated with the aging process is not supported by the studies. This means that the induced anoxemia test is not a dependable means for demonstrating coronary artery disease or that the disease does not consistently occur in the later decades. The authors favor the former opinion. For the present the test should be used only as a hospital procedure.

American J. Digestive Diseases, Fort Wayne, Ind.

9:87-114 (March) 1942

*Prognosis of Regional Enteritis. P. W. Brown and C. J. Donald Jr., Rochester, Minn.—p. 87.

*Ulcerative Colitis—Allergic Phenomenon. A. F. R. Andresen, Brooklyn.—p. 91.

Enzymatic Activity of Duodenal Juice and Blood Serum of Patients with Atrophy of Gastric Mucosa. A. M. Serby and F. Reich, Chicago.—p. 98.

Free Tyrosine in Blood Filtrate as Indication of Liver Disease. I. R. Jankelson, Boston.—p. 99.

Study of Excretion of Bromsulphalein in Bile. C. W. Wirts Jr. and A. Cantarow, Philadelphia.—p. 101.

Limitations in Use of Color Indicators in Gastric Analysis. J. E. Berk, J. E. Thomas and M. E. Rehfuss, Philadelphia.—p. 106.

Excretion of Neutral Red by Gastric Mucosa as Visualized Gastroscopically. H. H. Lerner, L. Asher and Katherine Andrews, Boston.—p. 109.

Prognostic Significance of Blood Urea Nitrogen Following Hematemesis of Melena. L. Schiff, R. J. Stevens and H. K. Moss, with technical assistance of Ellen S. Garber, Cincinnati.—p. 110.

Prognosis of Regional Enteritis.—The finding of 24 cases of regional enteritis in the hospital records prior to 1933 and of 154 up to 1941 (114 during the last four years) represented such a disproportionate increase as to indicate, in the opinion of Brown and Donald, an increasing incidence of the disease and not merely more acute recognition. Twenty-six per cent of the patients were Jewish and 70 per cent of them were less than 30 years old, whereas only 38 per cent of the gentile patients were less than 30. Roentgen examination after a barium sulfate enema revealed evidence of the disease in 124, and the barium sulfate meal identified 7 additional instances. Of the 178 patients 129 have been operated on one or more times. At the time of the report 87 of the patients were well, 29 were in fair condition, 26 were sick, 17 had died (exclusive of the 16 postoperative deaths) and there were no data on 3. It is not possible to predict the eventual status of the 29 patients listed as "fair." They are not invalids but they cannot be considered "well." The immediate mortality rate was lower and the ultimate result seemed better when the two stage operation was performed. The fate of those who require repeated intestinal resection is not encouraging. Only 14 of 23 patients so treated survived, and only 4 of them are considered "well." Twenty of 45 patients with complicating fistulas on whom there are data are apparently well; 19 after resection and 1 after a short-circuiting procedure. There were 9 deaths among the group of 45. Of the 31 who had short-circuiting operations 22 survived, and of these 14 were well at the time of the study, but only 7 have lived for three or more years after operation. When there is a preoperative diagnosis of a probable acute appendicitis in a patient found to have acute regional enteritis, such a patient should be kept under observation so that operation will not be delayed if complete resolution does not occur. Of 10 such patients 7 are well. Surgical intervention is the treatment of choice for regional enteritis. There is no known medical treatment that is of value in the sense that it cures the disease. The most important postoperative feature is maintenance of a high protein diet supplemented with components of the vitamin B complex.

Ulcerative Colitis.—Andresen states that of 50 consecutive patients with severe ulcerative colitis only 2 died because of complications—in 1 mastoiditis with erysipelas and in 1 acute pyelonephritis. None of the patients required operation for the colitis. In 33 food allergy was the cause of the disease, and these were all treated successfully. The theory of allergy conforms well with the accepted criteria for the disease. The pathologic changes in early ulcerative colitis are identical with those demonstrated in allergy experiments on human beings and on animals. The symptoms of ulcerative colitis are easily explainable on an allergic basis. Proctoscopic and roentgen

study will demonstrate the effect of allergenic food and the improvement that follows when such food is withdrawn from the diet. Treatment based on an allergic theory has produced better results than that based on an infective etiology.

American Journal of Hygiene, Baltimore

35:163-316 (March) 1942

*Epidemiologic Aspects of Encephalitis in Yakima Valley, Wash.: Mixed St. Louis and Western Equine Types. W. M. Hammon and Beatrice F. Howitt, San Francisco.—p. 163.

*Study in Active Immunization Against Epidemic Influenza and Pneumococcic Pneumonia at Letchworth Village: IV. Results in Epidemic of Influenza A in 1940-1941. M. Siegel, R. S. Muckenfuss, M. Schaeffer, Harriet Leslie Wilcox and Ann G. Leider, New York.—p. 186.

Typhus Fever in Peiping: Epidemiologic Considerations. Wei-T'ung Liu, S. H. Zia, H. L. Chung and C. W. Wang, Peiping, China.—p. 231.

Diphtheria Immunization: Simultaneous Active and Passive Immunization in Guinea Pigs: I. Antigenicity of Toxoids, Fluid and Alum Precipitated, in Presence of Passive Antitoxin. J. J. Phair and Charlotte M. Root, Baltimore.—p. 251.

Study of Epidemic of Influenza B. Clara Nigg, C. M. Eklund, Doris E. Wilson and J. H. Crowley, Minneapolis.—p. 265.

Search for Carriers in Outbreak of Acute Anterior Poliomyelitis in Rural Community: Incidence of Virus in Feces. G. Y. McClure, Albany, N. Y., and A. D. Langmuir, Peekskill, N. Y.—p. 285.

Diphtheria Immunization: Reactions of Adults Following Intranasal Toxoid. J. J. Phair, Baltimore.—p. 292.

Slide Rule and Two Nomograms by Which Percentage Deviation of Man from Average Weight of Men of His Height and Age May Be Calculated. T. I. Edwards, Washington, D. C.—p. 307.

Encephalitis in Yakima Valley.—From the inductive epidemiologic analysis of 86 cases of encephalitis in human beings and of 20 cases of encephalomyelitis in horses in 1939 and 1940, it appears to Hammon and Howitt that the western equine virus and the St. Louis virus were present in the Yakima Valley simultaneously and produced some instances of mixed infections. Neutralization tests of the blood serum of 50 patients showed 84 per cent to be positive for the western equine virus, 72 per cent for the St. Louis virus and 56 per cent for both viruses. The serum from 75 closely comparable controls from the general population disclosed neutralizing antibodies for the western equine virus in 6.7 per cent, for the St. Louis virus in 28 per cent and for both in 2.7 per cent. The figures for patients and controls were compared with those obtained for serum from other areas in the West and the difference helped to establish the presence of the St. Louis virus in the serum of Yakima patients as etiologically significant. The serum of a few normal chickens, pheasants and a duck were found to neutralize the western equine virus, and the blood of some horses neutralized the St. Louis virus. Suggestive correlation was found between the occurrence of antibodies in patients only to the St. Louis virus and contact with, or proximity to, horses, an observation which may be significant, since antibody to this virus was found in horses.

Immunization Against Influenza.—Siegel and his associates report data of their studies on the epidemiology of influenza A and the prophylactic value of the subcutaneous inoculation of influenza virus vaccines begun at Letchworth Village in 1937 and concluded in 1941. The last time at which vaccine was inoculated was on Dec. 6 and 7, 1940, six weeks before an epidemic of influenza A occurred which lasted from Jan. 14 to Feb. 26, 1941. A threefold increase in complement fixing antibodies followed inoculation in 45 per cent of the vaccinated population. A significant decline was observed within two months after inoculation. A secondary rise occurred shortly afterward in response to infection during the 1941 epidemic. At this time the control population also showed a significant rise in titer, the first since the last epidemic in 1939. An increase in antibody titer following epidemics of influenza A was observed at Letchworth Village in three successive outbreaks in 1937, 1939 and 1941. During these periods there was serologic evidence of widespread exposure to influenza A virus. In intervening periods the titer of the population usually declined within a few months after infection. Cases with a significant rise in complement fixing titer ("positive cases") could not be differentiated clinically from those without a significant rise in titer ("negative cases"). Within the period between the onset of the first and last positive case in each cottage there was no significant difference in the incidence of acute respiratory illnesses among those inoculated with influenza virus vaccine and others. Annual inoculation of influenza virus vaccine since 1937 did not seem to modify the results. There was no difference in the incidence of respiratory illness between those who responded to the influenza virus vaccine with a significant rise in titer and those who had no rise in titer following inoculation. Influenza A recurred in 3 patients; in 2 in 1939 and 1941, and in 1 in 1937, 1939 and 1941.

American J. Orthodontics and Oral Surgery, St. Louis

28:135-196 Orthodontics (March) 1942. **Partial Index**

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Congenital Syphilis and Malocclusions of Teeth. F. R. Stathers, Philadelphia.—p. 138.

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Oral Tuberculous Lesions. R. H. Brodsky, New York.—p. 132.

*Aphthae and Herpetic Gingivostomatitis. L. R. Cahn and H. A. Bartels, New York.—p. 140.

Oral Diagnosis and Public Health Practice. H. Strusser, New York.—p. 151.

Extensive Plastic Repair for Restoration of Lower Lip: Report of Procedure in Case in Which Lower Lip Was Entirely Removed for Eradication of Epithelioma. M. N. Federspiel, Milwaukee.—p. 163.

Aphthae and Herpetic Gingivostomatitis.—Results of various studies, Cahn and Bartels point out, demonstrate that aphthous ulcer, herpes labialis, aphthous stomatitis, herpetic stomatitis or acute infectious gingivostomatitis are caused by the herpes virus. The virus from aphthous lesions, when inoculated on the scarified cornea of rabbits, produced lesions identical to those caused by the herpes simplex virus. Encephalitis was induced in some animals subsequent to their inoculation with the virus from either herpes or aphthous lesions. Inclusion bodies were demonstrated in the cells of the injected cornea and the brains of animals inoculated with the virus of herpes or the virus of aphthous stomatitis. Rabbits inoculated with the virus of aphthous stomatitis were immune to the herpes virus. The herpetic antibody develops in the patient's serum during convalescence from herpes or aphthous stomatitis. The infection usually takes place in early childhood and is present thereafter. The virus remains dormant until some contributory factor lowers the local immunity of the tissue, when herpetic lesions occur. In contradistinction to other virus diseases, immunity is not permanent after an initial herpes simplex infection.

Am. J. Roentgenol. & Rad. Therapy, Springfield, Ill.

47:353-506 (March) 1942

*Post-Traumatic Painful Osteoporosis: Clinical and Roentgenologic Entity. L. G. Herrmann, H. G. Reineke and J. A. Caldwell, Cincinnati.—p. 353.

Further Lung Dusting Experiments. A. E. Barclay, K. J. Franklin and M. M. L. Prichard, Oxford, England.—p. 362.

Contrast Visualization of Heart and Great Vessels in Emphysema. M. L. Sussman, M. F. Steinberg and A. Grishman, New York.—p. 368.

Roentgenography with Aid of Chart Marked Off in Squares in Measurement of Cardiovascular System. E. Cotrim, São Paulo, Brazil.—p. 377.

*Roentgen Findings in Increased Lead Absorption Due to Retained Projectiles. H. R. Senturia, St. Louis.—p. 381.

Post-Traumatic Para-Articular Ossification of Knee Joint (Pellegrini-Stieda's Disease). J. Kulowski, St. Joseph, Mo.—p. 392.

*Bone Infarcts. S. C. Kahlstrom, Bath, N. Y.—p. 405.

Colon Studies: VIII. Diaphragmatic Flexure. J. L. Kantor, New York.—p. 417.

Pelvimetry by Perforated Plate Method. S. G. Henderson, Pittsburgh.—p. 427.

Sigmoid Loop in Inguinal Hernia: Report of Case. C. G. Lyons, A. J. Brogan and J. G. Sawyer, Hines, Ill.—p. 437.

Effect of Roentgen Rays on Growing Long Bones of Albino Rats: I. Quantitative Studies of Growth Limitation Following Irradiation. C. L. Hinkel, Harrisburg, Pa.—p. 439.

Granulosa Cell Carcinoma: Report of Two Cases. A. M. Gnassi, J. B. Faison and M. Fellman, Jersey City, N. J.—p. 458.

Basal Cell Epithelioma: Concept of Its Histogenesis. I. N. Holtzman and H. Bolker, Brooklyn.—p. 463.

Gamma Radiation from Airplane Instruments. R. B. Taft, Charleston, S. C.—p. 467.

Post-Traumatic Painful Osteoporosis.—To avoid confusion with atrophy of bone due to inactivity or disuse, Herrmann and his co-workers suggest that true osteoporosis is that type of atrophy of bone characterized by patchy demineraliza-

tion with coexisting signs of vasomotor instability, trophic changes in the soft tissues and usually severe visceral pain. The expression "acute bone atrophy" only adds to confusion, since the word "atrophy" suggests a painful syndrome in which the affected bones are "full of pores." Consequently "post-traumatic painful osteoporosis" is the more logical term for the syndrome which frequently follows trauma to some multi-articular joint. Post-traumatic osteoporosis is characterized by partial loss of motor function of the affected part, mild to severe vasomotor and trophic changes of the affected extremity, spotty demineralization of the bones near the site of trauma and mild to severe aching pain in the extremity. The functional disturbances are more extensive than can be explained on the basis of trauma alone, and the aching pain is out of all proportion to the local signs of injury to the tissues. Roentgenologically there are two main forms of osteoporosis: the acute and the chronic form. The acute form is characterized by a mottled appearance of the bones due to the irregular rarefied areas in the spongiosa. The mottling is usually most definite in the carpal, tarsal, metacarpal and metatarsal bones. In the chronic form the trabeculae of the bones are extremely fine and sometimes difficult to recognize. After the disease has reached the stage of almost complete decalcification, recalcification may begin spontaneously; but years later the roentgenograms may still show thinning of the cortex of the bones and thin lamellae containing irregular areas of recalcification. In cases without adequate treatment, recovery of function requires many months and frequently during recalcification extensive fusion of the carpal or tarsal bones takes place and this ankylosis usually causes great economic loss. The course of post-traumatic painful osteoporosis can be greatly shortened and most of the serious complications avoided if the disease is recognized in the acute phase and treated by thorough denudation of the main artery to the affected extremity (periarterial sympathectomy). Following periarterial sympathectomy 34 patients were relieved of aching pains and edema within twenty-four hours postoperatively, function began to improve within a few days and the patients resumed their work within an average time of three months. Complete return of function in a control group treated by physical therapy, roentgen therapy and other conservative measures took more than nine months. The course of the disease in the control patients was only slightly shortened, and unfavorable sequelae were about as frequent as when the process was left untreated.

Roentgen Signs of Increased Lead Absorption.—Senturia discusses the 6 case reports found in the literature which describe roentgen changes of retained lead projectiles. He reports 2 cases which have recently come under his observation. Recently Key also reported roentgen changes due to increased lead absorption. A critical study of the roentgen changes suggests that absorption from the retained missile can occur and that poisoning may supervene. The changes consist in a definite alteration in the missile itself in that there is fragmentation, disintegration and apparent infiltration. The roentgen demonstration of such a transformation does not always coincide with a clinical diagnosis of lead poisoning, but it does indicate that absorption in sufficiently large quantities is a potential danger. Signs of saturation of the tissues with lead have been confirmed by analyses of specimens removed at operation and necropsy. Infantry shot and shrapnel which consist for the most part of lead are more likely to result in disintegration and absorption than are fragments of grenade or splinters of an aerial bomb which consist mainly of steel. Of the 9 cases discussed by the author, all but 1 were in bone and adjacent to an active joint. It has been suggested that the constant motion of the articular surfaces is responsible for the disintegration of the bullet. Projectiles which remain embedded in soft tissue have not been known to show these changes. They soon become encapsulated and innocuous. The part that the synovial fluid plays in the solution of the lead would seem to warrant investigation. The interval between the gunshot wound and the onset of clinical symptoms of lead absorption in the 9 patients varied from one to twenty-two years. Individuals known to have retained projectiles of lead adjacent to active joints should have serial roentgen examinations to detect changes as they occur. Obscure and unexplainable symptoms referable to the blood, gastrointestinal tract or nervous system may be solved by this means.

Bone Infarcts.—Kahlstrom reports the occurrence of bone infarcts in a caisson worker and in 4 persons who have not been exposed to compressed air. While microscopic proof is lacking in these cases, the roentgen features are similar to those in which biopsy and necropsy studies were made. Three of the 4 patients had arteriosclerosis and 1 had neither a history of caisson disease nor evidence of arteriosclerosis.

Anesthesiology, New York

3:123-246 (March) 1942

*Rationale of Oxygen Therapy During Fever Therapy. S. C. Cullen, E. F. Weir and Evelyn Cook, Iowa City.—p. 123.
Atelectasis. D. E. Brace, New York.—p. 131.
Apparatus for Automatic Recording of Diastolic and Systolic Blood Pressure in Clinical Practice. H. C. Slocum, Madison, Wis.—p. 141.
*Effect of Certain General Anesthetic Agents on Small Blood Vessels in Ear of Rabbit. T. H. Seldon, J. S. Lundy and H. E. Essex, Rochester, Minn.—p. 146.
Tolerance of Humans for Procaine Injected into Subarachnoid Space. G. E. Burford, New York.—p. 159.
Story of Oil-Ether Colonic Anesthesia. J. T. Gwathmey, Tuscon, Ariz. —p. 171.
*Early Recognition and Treatment of Shock. C. R. Drew, Washington, D. C.—p. 176.
Relation of Respiratory Passages to Anesthesia. S. Iglauer, Cincinnati. —p. 195.

Rationale of Oxygen Therapy During Fever Therapy.—The arterial oxygen tension is reduced when hyperpyrexia is present. The administration of oxygen, Cullen and his colleagues point out, prevents this reduction and may explain the clinical benefit derived from the therapy.

Effect on Blood Vessels of Anesthesia.—Seldon and his co-workers observed the changes in the minute peripheral blood vessels of the ear of the rabbit produced by anesthesia with pentothal sodium, cyclopropane, nitrous oxide, ethylene and ether. The vessels observed had grown into the transparent chamber of a Clark window inserted in the animal's ear. With pentothal sodium there was a sustained decrease in the systolic blood pressure and a sustained increase in the diameter of the arterioles and capillaries. When cyclopropane and oxygen were used there was a sustained increase in the systolic blood pressure, the diameter of the arterioles was decreased and the diameter of the capillaries was increased. When nitrous oxide and oxygen were employed there was a sustained increase in the systolic blood pressure, and the diameter of the arterioles and capillaries was decreased. When ethylene and oxygen were used there was a slight increase in the systolic blood pressure, and the diameter of the arterioles and capillaries was decreased. When ether was administered by the drop method there was an increase in the systolic blood pressure, a decrease in the diameter of the arterioles with an apparent increase in the velocity of the blood stream through them and a decrease in the diameter of the capillaries with a decrease in the velocity of the blood stream through them. Ether and ethylene employed separately produced fairly similar results. The study suggests that the increase in the oozing of blood noticed in patients operated on under pentothal sodium anesthesia could result from the increase in the diameter of the arterioles and the capillaries caused by the anesthetic.

Early Recognition and Treatment of Shock.—Drew states that there are three defects in the peripheral vascular tree which need to be corrected in surgical shock. They are arteriolar and venular constriction, capillary dilatation and stasis of circulatory fluids in the capillary bed or loss into the tissue. For the correction of these defects the following is recommended: 1. To aid the restoration of the electrolyte balance, acid base equilibrium, normal arteriolar tone and circulatory volume, intravenous sodium chloride, at first in isotonic form and then in hypertonic form if the former gives no response, should be employed. 2. Capillary tone may be restored by using water soluble adrenal cortex extract in quantities sufficient to get a response in blood pressure. 3. The circulation may be sustained by adequate amounts of blood or plasma.

Archives of Internal Medicine, Chicago

69:551-720 (April) 1942

*Relation of Cardiac Lesions to Clinical Course of Rheumatic Fever. A. D. Console, New York.—p. 551.
Pulmonocardiac Failure as Result of Spinal Deformity: Report of Five Cases. A. J. Kerwin, Toronto, Canada.—p. 560.
Excretion of Coproporphyrin in Hepatic Disease: I. Correlation of Urinary and Fecal Excretion with Parenchymatous Hepatic Damage. S. Nesbitt, New Haven, Conn., and A. M. Snell, Rochester, Minn. —p. 573.
Id.: II. Urinary and Fecal Excretion in Biliary Obstruction. S. Nesbitt, New Haven, Conn., and A. M. Snell, Rochester, Minn.—p. 582.
Hamartial Nature of Tuberous Sclerosis Complex and Its Bearing on Tumor Problem: Report of Case with Tumor Anomaly of Kidney and Adenoma Sebaceum. S. E. Moolten, New York.—p. 589.
Acute Bacillary Dysentery: Clinicopathologic Study of 263 Consecutive Cases. H. H. Macumber, Cristobal, Canal Zone.—p. 624.
*Chemotherapy and Chemoserotherapy of Staphylococcic Infections. J. A. Kolmer and H. Brown, with technical assistance of Anna M. Rule, Philadelphia.—p. 636.
Quantitative Studies on Antithrombin. S. J. Wilson, Columbus, Ohio. —p. 647.
*Therapeutic and Prophylactic Detoxication of Sulfanilamide, Sulfapyridine and Sulfathiazole. G. J. Martin, C. Virginia Fisher and M. R. Thompson, New York.—p. 662.
Renal Lesions Following Intravenous Injection of Hypertonic Solution of Sucrose: Clinical and Experimental Study. R. H. Rigdon and E. S. Cardwell, Memphis, Tenn.—p. 670.
Liver and Biliary Tract: Review for 1941. C. H. Greene, New York. —p. 691.

Cardiac Lesions and Rheumatic Fever.—From 2,300 consecutive necropsies Console selected all those giving clinical evidence of rheumatic fever, verrucae, acute pericarditis or chronic endocarditis. Aschoff bodies were accepted as unequivocal evidence of the disease. Of 98 cases with both clinical evidence of rheumatic fever and lesions of the endocardium or the pericardium, Aschoff bodies were present in the myocardium in 28. The interval between the last attack of polyarthritis and death in 27 was five months or less and in 71 from five months to thirty-six years. Aschoff bodies were found in all in which death occurred during the first decade of life, in 64 per cent of those dying during the second decade and in 11 per cent of those dying during a later decade. When Aschoff bodies were found in the myocardium (28 cases) with 1 exception the interval between the last attack of polyarthritis and death was five months or less. A curve of the frequency of death of patients with symptoms of rheumatic fever and cardiac lesions shows two distinct peaks: one in the first decade of life, corresponding with deaths from cardiac failure and the presence of Aschoff bodies in the myocardium, and the other between the ages of 40 and 60 years, associated with cardiac failure, deforming lesions of the valves and absence of Aschoff bodies. Minor degrees of valvular deformity were predominant in the first three decades of life; advanced deformity was common in the later decades. Valvular deformity increased with the duration of the disease after the onset of symptoms, but it had no constant relation to the number of attacks or to the age at onset.

Staphylococcic Infection.—Experiments to determine the effectiveness of chemoserotherapy in the treatment of severe staphylococcic infection of mice and rabbits were carried out by Kolmer and Brown. The newer staphylococcus antitoxin and a sulfonamide drug appear to have an important synergistic action. Sulfathiazole and sulfathiazoline and then sulfapyridine and sulfadimethylpyrimidine have proved most effective in the treatment of experimental Staphylococcus aureus infection in mice. The complete cure of mice was not indicated by the survival rate, as varying percentages of mice which survived for twenty-one days have shown the presence of pyemic renal abscesses. However, there was a relation between the survival percentage and the incidence of renal abscesses. The simultaneous administration of staphylococcus antitoxin and a sulfonamide (chemoserotherapy) has given better results than therapy with one of the agents. Sulfathiazole and sulfapyridine were most effective for the treatment of staphylococcic septicemia in rabbits. All animals that survived for eighteen days, however, had pyemic abscesses of the kidneys or other organs, so that survival alone was not an index of complete cure. Sulfapyridine was also somewhat effective for the treatment of local lesions produced by the intradermal injection of Staph. aureus. It is concluded that the chemotherapy of staphylococcic infections is still unsatisfactory and inferior to sulfonamide therapy in hemolytic streptococcus and pneumococcic infections.

Sulfonamide Compounds.—Martin and his co-workers used 7,000 white mice to study the effect of the therapeutic and prophylactic detoxication of sulfanilamide, sulfapyridine and sulfathiazole. The toxicity of sulfanilamide was reduced from 20 to 40 per cent by the simultaneous administration of a single dose of a compound used by the body in the general processes of detoxication. Calcium glucuronate was the most efficacious detoxifying compound. A combination of aminoacetic acid, cystine, calcium glucuronate and ascorbic acid provided the most consistent and the greatest protection. The reduction in toxicity had no effect on the chemotherapeutic efficacy of sulfanilamide. On the contrary, it appeared that the antistreptococcus activity was slightly but definitely enhanced. There was a difference in the percentage of death rates of approximately 10 in the 3,000 mice used. The possibility that decreased absorption may have been a factor in decreasing toxicity was disproved in experiments on dogs. When the detoxicant was given with sulfanilamide, absorption was increased to approximately 10 per cent, which possibly may be a factor in enhancing the chemotherapeutic efficacy of sulfanilamide. The acute toxicity of sodium sulfapyridine was reduced by as much as 50 per cent by the simultaneous admission of detoxifying chemicals. Aminoacetic acid and ascorbic acid were the most effective single detoxifying chemicals. Again, the presence of a detoxifying chemical distinctly prolonged the survival period of mice, and the detoxicant did not decrease the speed of absorption or the maximal concentration of sulfapyridine. For sulfathiazole, cystine and aminoacetic acid exerted the greatest effect in combating intoxication. Likewise animals receiving detoxifying chemicals with the sulfathiazole survived longer, and the speed of absorption was not altered by administration of a detoxifying chemical.

Archives of Neurology and Psychiatry, Chicago

47:519-706 (April) 1942

Studies on Corpus Callosum: I. Laterality in Behavior and Bilateral Motor Organization in Man Before and After Section of Corpus Callosum. K. U. Smith and A. J. Akelaitis, Rochester, N. Y.—p. 519.
Tractotomy for Relief of Trigeminal Neuralgia. H. Olivecrona, Stockholm, Sweden.—p. 544.
*Western Variety of Equine Encephalitis in Man: Clinicopathologic Study. A. B. Baker and H. H. Noran, Minneapolis.—p. 565.
Amnestic Syndrome. T. Lidz, Baltimore.—p. 588.
Factors Affecting Changes Produced in Electroencephalogram by Standardized Hyperventilation. H. Davis and W. M. Wallace, Boston.—p. 606.
Vascular and Interstitial Cell Changes in Thiamine Deficient Animals. M. Prados, Montreal, Canada, and R. L. Swank, Boston.—p. 626.
*Myasthenia Gravis Treated by Excision of Thymic Tumor: Report of Two Cases. E. Campbell, N. F. Fradkin and B. Lipetz, Albany, N. Y.—p. 645.
Suprasellar Aneurysm: Report of Case with Recovery. R. M. Klemme and R. D. Woolsey, St. Louis.—p. 662.
Hemichorea (Hemiballismus): Association with Pallidal Lesion, Involving Afferent and Efferent Connections of Subthalamic Nucleus; Curare Therapy. J. W. Papez, Ithaca, N. Y.; A. E. Bennett and P. T. Cash, Omaha.—p. 667.

Equine Encephalitis in Man.—Baker and Noran studied in detail 10 human cases of western equine encephalitis of the 1941 epidemic; 5 of the patients died. Of the fatal cases, the virus was isolated in 1 and neutralizing antibodies were found in the serum in another. Similarity of the pathologic lesions in all the fatal cases and their resemblance to the lesions in the horse leaves no doubt as to nature of the disease. Neutralizing antibodies were detected in only 1 of the 5 nonfatal cases. Nevertheless, the similarity of the clinical features and the occurrence of cases among farmers from nearby localities where equine encephalitis was prevalent makes the diagnosis highly probable. The clinical features of the disease such as sudden onset, generalized headache, nausea, fever and lethargy are surprisingly consistent. After a week or two the symptoms subside. About 10 per cent of the patients die. The neurologic signs are nuchal muscular weakness and hyporeflexia. The spinal fluid shows moderate pleocytosis, with predominance of the mononuclears. In the fatal cases, lesions are found scattered throughout the nervous system, especially in the region of the basal nuclei. The histopathologic changes are characterized by suppurative inflammatory elements. Polymorphonuclears are common and form focal, diffuse and perivascular infiltrations. Mononuclear cells may be prominent. Petechiae and scattered areas of demyelination are present and may overshadow the inflammatory lesions.

Myasthenia Gravis.—From a review of literature on the association of a thymic tumor or enlargement of the thymus with myasthenia gravis, it appears to Campbell and his co-workers that the high incidence (approximately 50 per cent) of pathologic changes in the thymus is more than coincidental. Seven patients with myasthenia gravis were encountered at the Albany Hospital in the last six years, and roentgen evidence of mediastinal tumor was observed in 3. The thymoma of 2 was removed at operation, in 1 successfully and in 1 unsuccessfully. It appears probable that the thymic abnormalities may in some way be related to myasthenia gravis. Thymic tumors may bear a primary causal relation to myasthenia gravis or they may be secondary or associated causes, as the goiter is frequently in acromegaly. The remission of symptoms which has been reported to follow thymectomy in 3 cases in the literature and in their case may be cited as evidence of a primary causal relationship. Although unconfirmed, the experimental work of Adler, who produced myasthenia in dogs by injecting thymus extract and relieved the symptoms by prostigmine, is additional suggestive evidence. On the other hand the pathologic changes in the thymus may not be the sole cause of the disease, as they are absent in the other half of the cases. Furthermore, although the thymoma was completely removed in 1 of the authors' patients the myasthenia gravis persisted, although in a milder form. Observations thus far available militate somewhat against thymic tumor and hyperplasia as the sole primary cause of myasthenia gravis.

Bulletin New York Academy of Medicine, New York

18:235-300 (April) 1942

Determining Factors in End Results Following War Wounds and Compound Fractures. H. W. Orr, Lincoln, Neb.—p. 237.
Evaluation of Drugs Used in Treatment of Cardiovascular Disease. A. C. DeGraff, New York.—p. 246.
Treatment of Leukemia by Radioactive Phosphorus. L. F. Craver, New York.—p. 254.
Adrenal Cortex and Electrolyte Behavior. R. F. Loeb, New York.—p. 263.

Canadian Public Health Journal, Toronto

33:99-144 (March) 1942

Health, Nutrition and National Defense. T. Parran, Washington, D. C.—p. 99.
Industrial Hygiene in Relation to Aviation. K. E. Dowd, Montreal.—p. 105.
Use of Confidential Death Certificate in Province of Quebec, P. Parrot, Quebec.—p. 114.
Typing of Bacillus Typhosus with Bacteriophage in Province of Quebec. J.-M. Desranleau, Montreal.—p. 122.
Vaccination Against Typhoid Fever in Outlying Districts of Quebec. E. Martel, Amos, Que.—p. 130.

Endocrinology, Springfield, Ill.

30:355-524 (March) 1942. **Partial Index**

Effect of Desoxycorticosterone Acetate on Blood Pressure of Dog. S. Rodbard and S. C. Freed, Chicago.—p. 365.
Method for Assay of Gonadotropin Content of Normal Human Urine. R. F. Varney and F. C. Koch, Chicago.—p. 399.
Elimination of Pars Nervosa Without Eliciting Diabetes Insipidus. A. D. Keller, Tuscaloosa, Ala.—p. 408.
Effect of Pressor and Oxytocic Fractions of Posterior Pituitary Extract on Loss of Water Administered to Albino Rats. E. M. Boyd and N. D. Garand, Kingston, Ont., Canada.—p. 433.
Correlations Between Chemical Structure and Pharmacologic Actions of Steroids. H. Selye, Montreal, Canada.—p. 437.
Influence of Testosterone on Morphogenetic Actions of Estradiol. S. Albert, Montreal, Canada.—p. 454.
Uterine and Ovarian Response to Partial and Subtotal Ovarian Resection. G. Van Wagenen and A. H. Morse, New Haven, Conn.—p. 459.
Sex Hormones and Hair Changes in Rats. T. R. Forbes, Baltimore.—p. 465.
Influence of Stilbestrol and Thyroxine on Galactose Absorption and Liver Function. R. C. Grauer, W. F. Starkey and Eleanor Saier, Pittsburgh.—p. 474.
Radioactive Iodine as Indicator of Metabolism of Iodine: IV. Distribution of Labeled Thyroxine and Diiodotyrosine in Liver, Muscle and Small Intestine. I. Perlman, M. E. Morton and I. L. Chaikoff, Berkeley, Calif.—p. 487.
Id.: V. Effects of Hypophysectomy on Distribution of Labeled Thyroxine and Diiodotyrosine in Thyroid Gland and Plasma. M. E. Morton, I. Perlman, Evelyn Anderson and I. L. Chaikoff, Berkeley, Calif.—p. 495.
Parallelism in Response of Thyroid and Parathyroid to Various Hormones and Hormone-like Substances. H. T. Blumenthal and L. Loeb, St. Louis.—p. 502.

Illinois Medical Journal, Chicago

81:169-252 (March) 1942

Abnormalities of Intrauterine Environment Associated with 2,000 Fetal and Neonatal Deaths. Edith L. Potter, Chicago.—p. 189.
Management of Chronic Arthritis. E. F. Traut, Chicago.—p. 199.
Injection Treatment of Hemorrhoids. H. E. Bacon, Philadelphia, and F. D. Wolfe, Chicago.—p. 202.
Tuberculin Test. S. R. Rosenthal, Chicago.—p. 205.
Evolution of Diagnosis and Treatment of Cardiovascular Diseases. E. Keating, Chicago.—p. 208.
Endoscopy in Diagnosis and Treatment of Diseases of Chest. S. A. Friedberg, Chicago.—p. 212.
*Electrically Induced Convulsions for Treatment of Functional Psychoses. J. V. Edlin, Chicago.—p. 216.
The Pathologist in the Cancer Clinic and in the Hospital. E. F. Hirsch, Chicago.—p. 222.
Cardiac Review of 1940. N. Flaxman, Chicago.—p. 225.
Etiology of Stammering: Fundamentally a Wrong Psychophysiologic Habit in Control of Vocal Cords for Production of Individual Speech Sound; Beginning Presentation. E. L. Kenyon, Chicago.—p. 232.
Doctor's Ladies—Medicine's Closest Ally. F. P. Hammond, Chicago.—p. 238.

Electrically Induced Convulsions for Functional Psychosis.—Edlin induced convulsions with the Offner electric shock therapy apparatus in 126 cases of functional psychosis. The duration of the disorder before treatment ranged from less than six months to ten years and included all the functional psychoses with the exception of manic depressive psychosis. Patients who were ill for less than six months showed a 52.63 per cent recovery rate, and the rate for those affected from six months to one year was 30.76 per cent, for those ill from one to five years it was 21.05 per cent and for those ill from six to ten years it was 20 per cent. The greatest percentage of recoveries was shown by patients suffering from involutional melancholia. The next largest recovery rate was shown by patients with catatonia, and then those with hebephrenia and dementia precox combined with hebephrenic and catatonic features. The results, as with convulsive therapy with metrazol and insulin, show that the duration of a psychosis is important from a prognostic point of view. The author prefers electrical to metrazol therapy because of the high percentage of recoveries and the almost total absence of fear. Psychotherapy is a necessary and vital adjunct to electrical therapy.

Journal of Clin. Endocrinology, Springfield, Ill.

2:137-208 (March) 1942

Association of Short Stature, Retarded Sexual Development and High Urinary Gonadotropin Titers in Women: Ovarian Dwarfism. R. F. Varney, A. T. Kenyon and F. C. Koch, Chicago.—p. 137.
Effect of Single Injections of Estradiol Benzoate on Normal Human Menstrual Cycle, with Special Reference to Problem of Estrogen Sensitivity. J. Gillman, Johannesburg, South Africa.—p. 146.
Nature of Subjective Reactions Evoked in Women by Progesterone, with Special Reference to Problem of Premenstrual Tension. J. Gillman, Johannesburg, South Africa.—p. 157.
Skin Reactivity During Menstrual Cycle. O. C. Hansen-Pruss and Ruth Raymond, Durham, N. C.—p. 161.
*Six Hour Pregnancy Test. U. J. Salmon, S. H. Geist, A. A. Salmon and I. L. Frank, New York.—p. 167.
Mechanism of Insulin Resistance to Toxemic States. M. Taubenhaus and S. Soskin, Chicago.—p. 171.
Arteriosclerosis and Hypothyroidism: Observations on Their Possible Interrelationship. M. Bruger and J. A. Rosenkrantz, New York.—p. 176.
Effect of Male Hormone Therapy on Urinary Gonadotropins in Man. H. R. Catchpole, J. B. Hamilton and G. R. Hubert.—p. 181.
Vasomotor Reactions Persisting for Twenty Years in Male: Treatment with Androgens; Flushing and Male Hypogonadism. M. S. Biskind, New York.—p. 187.
Use of Male Sex Hormone in Endocrine Disturbances in Children: Androgens and Genital Development. I. Jaffe and G. Brockway, Brooklyn.—p. 189.

Six Hour Pregnancy Test.—Salmon and his associates describe a six hour test for human pregnancy which is based on the observation that the chorionic gonadotropin causes a decided hyperemia of the ovaries of immature rats. The hyperemia is grossly discernible six hours after the injection of urine from pregnant women. To perform this test 3 animals weighing from 35 to 45 Gm. are injected with 2 cc. of the first morning specimen of urine, and a necropsy is held at the end of six hours. Positive results were obtained in all but one of seventy-eight tests of pregnancy urines and negative results in all of the thirty-one tests of urine specimens from nonpregnant persons. A confirmatory twenty-four hour test, based on

the proliferation of the epithelial and muscular elements of the vagina of the immature rat induced by the estrogens present in the pregnancy urine, is also described. Such confirmation is unnecessary as soon as one becomes familiar with the six hour ovarian vascular reaction.

Journal Neuropath. and Exper. Neurology, Baltimore

1:1-128 (Jan.) 1942

Rise of Neuropathology. G. B. Hassin, Chicago.—p. 1.
Studies in Pathology and Pathogenesis of Multiple Sclerosis, with Special Reference to Phlebothrombosis and Guiraud's Bodies. O. Marburg, New York.—p. 3.
Hemangioblastomas of Meninges and Their Relation to Lindau's Disease. H. Zeitlin, Chicago.—p. 14.
Post-Traumatic Cerebral Thrombosis and Infarction: Report of Case and Discussion of Its Bearing on Problem of Immediate and Delayed Post-Traumatic Apoplexy. J. A. de Veer and J. Browder, Brooklyn. —p. 24.
Brain Abscess Due to Endameba Histolytica. A. Stein and A. Kazan, New York.—p. 32.
Progressive Subcortical Encephalopathy (Binswanger's Disease). C. Davison, New York.—p. 42.
*Histopathology of Central Nervous System in North Dakota Epidemic Encephalitis. A. Weil, Chicago, and P. J. Breslich, Minot, N. D. —p. 49.
*Infundibuloma: Newly Recognized Tumor of Neurohypophysial Derivation with Note on Saccus Vasculosus. J. H. Globus, assisted by R. S. Globus, New York.—p. 59.
Cerebral Histologic Changes in Acute Experimental Inanition in Cats. A. Ferraro and L. Roizin, New York.—p. 81.
*Traumatic Degeneration of Spinal Cord (Spinal Concussion). G. B. Hassin, Chicago.—p. 100.
Present State of American Neurology. P. Bailey, Chicago.—p. 111.

Central Nervous System in Epidemic Encephalitis.—Weil and Breslich compared the histopathologic changes of the brains from 9 patients of the 1941 epidemic of encephalitis with those of other types of epidemic encephalomyelitis. In both the St. Louis and the North Dakota epidemics the peculiar type of inflammatory reaction consisting of the combined proliferation of perivascular round cells and glia and the type of distribution of the inflammatory reaction throughout the brain with its maximal intensity in the basal ganglions and the midbrain were common. The two diseases are differentiated by the presence in the North Dakota epidemic of areas of tissue necrosis in the gray and the white matter of the brain. This fact calls for a comparison of this type of encephalitis with that following measles in which areas of severe necrosis around blood vessels of the white matter with destruction of axis cylinders, myelin sheaths and glia are found. The decided astrogliosis in the North Dakota cases, absent in the measles type, should not be described as an area of "demyelination." Microscopically the perivascular hemorrhages do not justify a classification of the North Dakota encephalitis as an "acute hemorrhagic leukoencephalitis." Perivascular hemorrhages may be found in any type of acute encephalitis, especially that following scarlatina, influenza, pneumonia and bacteremia.

Infundibuloma.—Globus describes for the first time a tumor derived from the neurohypophysis. It simulates the structure of the infundibulum including the neurohypophysis, and its vascular pattern is common to its site of origin—the infundibular region. The name infundibuloma, indicating its origin and its microscopic character, is suggested. Failure to find some relationship of this tumor to phylogenic remnants of the saccus vasculosus does not obviate the fact that it is an infundibular and autochtonous neoplasm. Two cases are reported.

Traumatic Degeneration of Spinal Cord.—Hassin believes that trauma should be included with intoxications and infections as a possible cause of chronic degenerative disease of the central nervous system. Trauma as an etiologic factor is often looked on with suspicion and with even incredulity unless there is a definite history of a broken skull or neck. It is probable that the clinical features of degenerations caused by some form of trauma (concussion and contusion) only resemble the classic degenerative entities, such as amyotrophic lateral sclerosis, but are not identical with them. They are morbid entities, differing from the classic nontraumatic forms both pathologically and clinically. Thus a so-called incomplete form of amyotrophic lateral sclerosis, characterized solely by muscular atrophies and spasticity and no bulbar phenomena, may be produced by inflammatory, degenerative, neoplastic or granulomatous processes, fractures, dislocations, contusions and concussions of the cervical region of the spinal cord. The subject of spinal concussion is controversial because reliable pathologic observations are lacking, but some of the greatest clinicians considered trauma as a significant cause of disturbances of the central nervous system. Studies of many cases of his own and those from the literature cause the author to believe that concussion is an unquestionable factor in the causation of disorders of the central nerve which, under certain circumstances, may resemble those of progressive muscular atrophy, amyotrophic lateral sclerosis, multiple sclerosis and other conditions, differing from them not only clinically and pathologically but also in their course. The suggestive pathologic features of degeneration of the cord due to trauma are foci of softening combined with degeneration of the anterior horn cells and the long fiber tracts, and in early stages with areas of rarefaction. The changes are analogous to those occurring in concussion of the brain. Mild traumas leading to degeneration are compatible with life; severe traumas are usually rapidly fatal, and there is no time for neural degeneration and the full development of signs and symptoms to appear.

Laryngoscope, St. Louis

52:169-254 (March) 1942

Problem of Tonal Dip. E. G. Wever, Princeton, N. J.—p. 169.
Lymphoid Tissue in Upper Respiratory Tract. D. C. Jarvis, Barre, Vt. —p. 188.
Petrositis with Contralateral Symptoms. E. H. Brown, Tucson, Ariz. —p. 200.
Nonsurgical Treatment for Deafness. E. P. Fowler Jr., New York. —p. 204.
Microscopic Study of Temporal Bones in Dysostosis Multiplex (Gargoylism). Dorthy Wolff, St. Louis.—p. 218.
Otitic Meningitis Pneumonic Type III with Recovery: Case. A. M. Street, New York.—p. 224.
Type III Pneumococcus Meningitis and Septicemia with Complete Recovery. M. Moghtader, New York.—p. 226.
What Is Being Done for Deafness of School Children. W. M. Hunt, New York.—p. 230.
Frontal Sinusitis: Osteomyelitis and Meningitis; Operation; Recovery. J. S. Hanley, New York.—p. 239.
Allergy in Otolaryngology and Ophthalmology: Review of Recent Current Literature. F. K. Hansel, St. Louis.—p. 242.

Medical Annals of District of Columbia, Washington

11:83-124 (March) 1942

Diseases of Arteries Affecting Extremities. W. M. Yater, Washington. —p. 83.
Relation of Etiology to Treatment of Varicose Veins. J. R. Veal, Washington.—p. 90.
Physiologic Background of Peripheral Vascular Disease. A. W. Duryee, New York.—p. 93.
Recent Advances in Surgical Treatment of Peripheral Disease. N. E. Freeman, Philadelphia.—p. 95.
Peripheral Vascular Diseases: Panel Discussion. W. M. Yater, Washington; A. W. Duryee, New York; N. E. Freeman, Philadelphia, and J. R. Veal, Washington.—p. 98.

Military Surgeon, Washington, D. C.

90:225-352 (March) 1942

Medical Profession and Medical Preparedness. I. Abell.—p. 225.
Rehabilitation and Follow-Up of Selective Service Men Rejected for Military Service. C. R. Reynolds.—p. 232.
Some Problems of Selective Service. L. G. Rowntree.—p. 238.
Present Policies and Activities of Medical Department of U. S. Army. F. B. Wakeman.—p. 245.
Nutritional Problems of Army. P. E. Howe.—p. 253.
Veterinary Service in Defense Effort. R. A. Kelser.—p. 266.
Influence of Tactics on Evacuation and Organization of Division Medical Service. W. P. Davenport.—p. 272.
General Mission of Military Aviation Medicine. D. N. W. Grant. —p. 281.
Medical Service at Remote Naval Bases. L. W. Johnson.—p. 290.
Medical Service of Armored Force. R. H. Duenner.—p. 300.
Blood Substitutes in Military Service. D. B. Kendrick Jr. and L. R. Newhouser.—p. 306.
Oral Diagnosis and Postoperative Complications—Their Importance to the Dentist: Review of Two Cases. J. L. Bernier.—p. 315.

Public Health Reports, Washington, D. C.

57:369-408 (March 13) 1942

Pollen Concentration of Atmosphere. A. O. Dahl and R. V. Ellis. —p. 369.
Incidence of Cancer in Birmingham and Jefferson County, Ala., 1938. H. J. Sommers.—p. 377.

57:409-444 (March 20) 1942

Milk Control in the Defense Program. A. W. Fuchs.—p. 422.

Southwestern Medicine, El Paso, Texas

26:67-102 (March) 1942

Review of Surgical Treatment of High Blood Pressure. R. M. Stuck, Denver.—p. 68.
Tuberculous Osteomyelitis of Shafts of Large Long Bones. W. C. Basom, El Paso, Texas.—p. 71.
Clinical Problems in Diagnosis and Treatment of Jaundice. W. H. Nadler, Chicago.—p. 74.
Acute Lymphatic Leukemia: Precipitation by Severe Hemorrhage. E. H. Brown, Tucson, Ariz.—p. 82.
Cyclopropane: Safe Anesthetic Agent. W. W. Hutchinson, Los Angeles.—p. 85.

Surgery, St. Louis

11:333-502 (March) 1942

*Studies on Intravenous Administration of Whole Bovine Plasma and Serum to Man. A. J. Kremen, H. Hall, H. K. Koschnitzke, Beatrice Stevens and O. H. Wangensteen, Minneapolis.—p. 333.
*Comparison of Effects of Local Application of Heat and of Cold in Prevention and Treatment of Experimental Traumatic Shock. A. Blalock, Baltimore.—p. 356.
Study of Gastrointestinal Motility in Dog Following Ileocolostomy and Partial Colonic Resection. D. D. Kozoll and H. Necheles, Chicago.—p. 360.
Pathogenicity of Bacteria of Appendicitis Peritonitis: Experimental Study. W. A. Altemeier, Cincinnati.—p. 374.
*Peptic Ulcer in Meckel's Diverticulum Causing Intrinsic Intestinal Obstruction: Report of Two Cases. J. M. Waugh, W. E. Herrell and L. K. Crumpacker, Rochester, Minn.—p. 385.
Chylothorax and Chyloperitoneum: Effects of Reintroduction of Aspirated Chyle. J. M. Little, Winston-Salem, N. C.; C. Harrison, Nashville, Tenn., and A. Blalock, Baltimore.—p. 392.
Surgical Management of Varicose Veins: Importance of Individualization in Choice of Procedure. H. N. Harkins and R. Schug, Detroit.—p. 402.
Congenital Malformations of Rectum and Anus: Analysis of Embryologic Background, Treatment and Results in Twenty-Five Patients. D. E. Harken, Boston.—p. 422.
Bone Tumors with Reference to Their Treatment. M. M. Copeland, Baltimore.—p. 436.
Aspiration Biopsy: Further Observations with Improved Instrument. F. Wrenn and J. M. Feder, Anderson, S. C.—p. 456.
Use of Cold Air Blast on Precancerous Skin Lesions and Hemangiomas. J. K. Poppe, New Haven, Conn.—p. 460.
Treatment of Major Wounds of Skull: I. Cerebral Fungus: Treatment by Skin Grafting. O. R. Hyndman, Iowa City.—p. 466.

Whole Bovine Plasma and Serum.—Kremen and his associates evaluated the usefulness of whole bovine plasma and serum in man, studied the items contributing to reactions with their use and determined the effect of their proteins on the nitrogen balance of man. In order to eliminate the fibrinogen fraction, serum rather than plasma was used. The 120 patients selected for trial on bovine plasma and serum have been usually restricted to those with inoperable carcinoma, and then only those were given bovine plasma or serum who had only a slight or a negative cutaneous reaction to a preliminary cutaneous test. In the groups given whole plasma or serum the incidence of immediate reactions was 58.3 and 66.6 per cent respectively. When bovine serum was adsorbed on human erythrocytes the incidence of reactions was 24.5 per cent in 53 patients. Kaolin as an adsorbing medium did not remove any of the hemolysins or hemagglutinins. On two occasions bovine plasma was used for shock; 1 patient with a bleeding ulcer was given 300 cc. of bovine plasma intravenously and the blood pressure was raised from 80 systolic and 40 diastolic to 130/90, and the other patient was given 500 cc. of bovine serum and his blood pressure was raised from 90/70 to 110/80. Positive nitrogen balance can be attained by the intravenous administration of human plasma and can be approached closely with whole bovine plasma. The preparation of a satisfactory product of bovine albumin free from the globulin fraction may prove a safe and practical blood substitute. The incidence of reactions, although not severe, is sufficient to contraindicate its clinical use at the present time.

Experimental Traumatic Shock.—Blalock studied the effect of heat or cold applied to the injured part of animals in experimental shock produced by gross trauma to an extremity. Only large animals were used, and pain was prevented by suitable anesthetic agents. Usually the animals were observed until they died. The results do not indicate that local cooling of the injured part would lessen the escape of blood and fluid into the traumatized area and the adjacent tissues. It is possible that the escape of fluid into the injured tissues would have been lessened had the part been cooled more rapidly. The average survival period of the animals in the group in which cold was applied was twice that of the group in which the body temperature was elevated by the local application of heat. It would appear that extreme degrees of heat should not be used even locally in the treatment of shock, particularly if means are not available for increasing the blood volume by blood or a suitable substitute. The patient who has been exposed to cold and moisture should be placed in a warm bed and covered with blankets. On the other hand, the indiscriminate use of hot water bottles and other heating devices may harm rather than improve the general condition of the patient.

Peptic Ulcer in Meckel's Diverticulum.—Two cases of peptic ulcer in Meckel's diverticulum are reported by Waugh and his co-workers. Careful gross and microscopic examination of the specimens removed at operation revealed that intrinsic intestinal obstruction had developed in the ileum as a result of the inflammatory reaction associated with active ulceration in or near the diverticulum which contained gastric mucosa with typical parietal cells. This type of obstruction is similar to that occurring in the duodenum secondary to peptic ulceration. It is distinct from that usually associated with a complicated Meckel's diverticulum which is of an extrinsic or mechanical nature and which results from the formation of adhesions and inflammatory exudate about a Meckel's diverticulum which has perforated, with the subsequent occurrence of peritonitis. The 2 cases are probably the first to be reported in which proved peptic ulcer in Meckel's diverticulum resulted in intrinsic intestinal obstruction.

11:503-670 (April) 1942

*Malignant Adenoma of Lung: Carcinoma-like Tumors with Long Clinical Course. W. E. Adams, P. E. Steiner and R. G. Bloch, Chicago.—p. 503.
Experimental Atelectasis in Dogs: Its Effect on Plasma Volume, Hemoglobin, Hematocrit, Blood Gases, Circulation Time and Pulmonary Blood Flow. J. L. Keeley and J. G. Gibson 2d, Boston.—p. 527.
*Some Observations on Acute Renal Hypertension. W. C. Quinby and F. A. Simeone, Boston.—p. 544.
Duodenal Obstruction. A. V. Partipilo and G. A. Wiltrakis, Chicago.—p. 557.
*Obstruction of Stomach Due to Congenital Double Septum with Cyst Formation. A. R. Metz, R. Householder and J. F. DePree, Chicago.—p. 586.
Spinal Extradural Cysts. F. H. Mayfield, Cincinnati, and E. G. Grantham, Louisville, Ky.—p. 589.
Shock and Hyperpyrexia Induced by Intravenous Glucose Infusion: Case and Its Treatment. J. Medoff and S. Burton, Chicago.—p. 596.
Effect of Intravenous Theophylline with Ethylenediamine (Aminophyllin) on Rate and Depth of Respiration: Clinical Study. L. Sperling, S. Weisman and R. Papermaster, Minneapolis.—p. 600.
Positioning in Surgery of Extremities. L. N. Cozen, Los Angeles.—p. 605.
Polyostotic Fibrous Dysplasia. E. H. White, Cincinnati.—p. 607.
Scalenus Anticus Factor in Congenital Torticollis. S. M. Copland, New Orleans.—p. 624.
Rat Bite Fever: Two Cases. A. G. Rogliano, Valhalla, N. Y.—p. 632.
Intestinal Obstruction as Phase of Carcinoma of Cervix. B. Pearson and M. Garcia, New Orleans.—p. 636.

Malignant Adenoma of Lung.—Adams and his colleagues report 5 cases of endobronchial tumor. The neoplasm is characterized by a long clinical course with low grade but definite malignant manifestations. Differentiation of the benign from the malignant epithelial tumor of the bronchus is not possible from bronchoscopic biopsy material, as no criteria are obtained as to the amount of tumor invading the surrounding structures or as to the presence of distal metastasis. In treatment it must be assumed that the tumor is malignant or potentially malignant and should be removed by lobectomy or pneumonectomy, preferably lobectomy if all the tumor bearing tissue is removed. Sections for microscopic study should include the entire tumor.

Acute Renal Hypertension.—Quinby and Simeone studied the immediate effects of short lasting but total ischemia of the kidney in 10 cats and 7 dogs. A rise in blood pressure followed release of acute renal ischemia in 5 of the cats and the 7 dogs. Pressor effects were obtained by total occlusion of the renal arteries for as short a time as three minutes. Ischemia of greater duration than ten minutes did not increase the degree or duration of the pressor response when the occluding clamps were released. A mean arterial pressure of at least 50 to 60 mm. of mercury was necessary to insure a detectable flow of blood through the kidney. Hypertension was produced without a demonstrable effect on the stroke volume or the rate of the denervated heart in animals from which the adrenal medullas were removed. The experiments suggest a convenient technic for studying renal hypertension.

Obstruction of Stomach.—A case of complete congenital obstruction of the stomach by a mucosal cyst in a newborn infant which was successfully operated on the third day of life is presented by Metz and his associates. The cyst was gastric in origin and probably the result of the formation of two septums in the stomach. The operative technic consisted in reestablishing the lumen through the stomach by perforating the walls of the cyst. The boy at 3 years and 2 months of age was 3 feet 6 inches (107 cm.) tall, weighed 38 pounds (17 Kg.) and was in excellent health. A roentgen examination with a barium sulfate meal showed the stomach to be normal in size and shape with no evidence of a filling defect. The pylorus was patent and appeared to be functioning normally.

Western J. Surg., Obst. & Gynecology, Portland, Ore.

50:115-176 (March) 1942

*Duration of Pregnancy. P. H. Arnot, San Francisco.—p. 115.
Specific Interacting Substances of Eggs and Sperm. A. Tyler, Pasadena, Calif.—p. 126.
Therapeutic Abortion—Fact and Fallacy. H. C. Hesseltine, Chicago.—p. 139.
Selection of Donors for Use in Artificial Insemination. A. I. Weisman, New York.—p. 142.
Acute Inversion of Puerperal Uterus. S. D. Hart, Los Angeles.—p. 145.
*Etiology of Acute Inversion of Puerperal Uterus: Classification Based on Analysis of Literature and Animal Observation: Report of Case. M. Salvin, Los Angeles.—p. 147.
Septicemia Complicating Obstetric and Gynecologic Cases. E. A. Pearson, Los Angeles.—p. 156.
Umbilical Herniorrhaphy and Appendectomy on Newborn Within One Hour of Birth. J. L. Bubis, Cleveland.—p. 165.
Vaginal Cyst: Case Report Complicating Pregnancy. E. M. Wilder, Baltimore.—p. 168.
New Bipolar Spot Coagulating Electrode for Neuro and General Surgery. M. A. Glaser, Los Angeles.—p. 171.

Duration of Pregnancy.—In an effort to determine the length of pregnancy, Arnot reviewed the history of the pregnancies of 3,606 patients and found the length to be two hundred and eighty and eight-tenths ± ten and two-tenths days. Of the patients 53.5 per cent delivered later than the expected date of confinement, 42.44 per cent delivered before and only 4.07 per cent delivered on the estimated date. The average number of days late was eight and twenty-four hundredths and the average days early was eight and fifty-six hundredths. There was a tendency for women with menstruation cycles of less than twenty-eight days to deliver early and those with longer cycles to deliver late. Apparently in some women a mature child develops sooner than in others. There was a definite tendency for women to be consistent in the onset of their labors: if they were late with one baby they were apt to be late with subsequent babies, and vice versa. The baby's weight alone will not accurately determine prematurity or postmaturity. For uniformity, it is suggested that in using Naegele's rule one first count back three months from the last menstruation and then add seven days.

Inversion of Uterus.—Salvin reports the occurrence of acute inversion despite the fact that every procedure was done according to the best accepted obstetric methods and good management. An etiologic factor was not present. The placenta was not adherent, labor was not difficult, the cord was of normal length, no traction was made on the cord and no undue pressure was exerted on the fundus. There was no evidence of uterine inertia. It was assumed that the patient would have had the inversion under any circumstances, and on the basis of the literature and the accepted classification (mismanagement and spontaneous) the inversion was called spontaneous. Accurate data on acute inversion was acquired by observing a supervised herd of cows which reflected facts on the issue of mismanagement. In the herd observed the ratio of inversion was 1 : 517 births. More than 90 per cent delivered themselves without an attendant, and the percentage of inversion among them was no greater in those needing assistance. Acute inversion was infrequent in primiparous cows except after abortion. As the cord breaks when the calf is born, traction on the cord had no relation to inversion; nor did an adherent placenta and its removal, inertia of the uterus, persistent contraction, shock or hemorrhage. Mismanagement played an insignificant part in the production of acute inversion in cows.

Yale Journal of Biology and Medicine, New Haven

14:333-442 (March) 1942

*Observations on Massive Dose Arsenotherapy of Early Syphilis by Intravenous Drip Method: I. Toxicology, Clinical Observations and Therapeutic Results. J. F. Sadusk Jr., B. Craige Jr., N. Brookens, A. K. Poole and M. J. Strauss, New Haven, Conn.—p. 333.
*Id.: II. Electrocardiographic Abnormalities Associated with Massive Arsenotherapy. A. J. Geiger, B. Craige Jr. and J. F. Sadusk Jr., New Haven, Conn.—p. 357.
Id.: III. Pregnancy and Its Outcome Associated with or Following Treatment of Early Syphilis by Massive Arsenotherapy. J. F. Sadusk Jr. and T. E. Shaffer, New Haven, Conn.—p. 365.
Streptococcus Hemolyticus: Study of Virulence. G. P. Blundell, Philadelphia.—p. 373.
Effect of Pneumococcic Lobar Pneumonia on Histamine Content of Lung. A. Gilman and G. E. Lindskog, New Haven, Conn.—p. 387.
Air Borne Fungi in New Haven, Conn.: Record for Year September 1940 to September 1941. N. S. Dimond and K. W. Thompson, New Haven, Conn.—p. 395.
Inversion of Uterus: Report of Three Cases and Use of Chemotherapy. H. Thoms, New Haven, Conn.—p. 399.
Possible Ariboflavinosis in Premature Infant. S. S. Stevenson, New Haven, Conn.—p. 403.
Some Physician Friends of Joseph Farington, R. A.: II. Anthony Carlisle. G. H. Smith, New Haven, Conn.—p. 407.

Massive Arsenotherapy of Syphilis.—Since January 1940 Sadusk and his co-workers have used mapharsen by the continuous intravenous drip for the treatment of 33 patients with early primary and secondary syphilis. The patient received 0.24 Gm. of mapharsen daily, or a total of 1.2 Gm. during the five days. Primary fever of 101 F. or higher occurred in 14, secondary fever of 101 F. or higher in 10, toxicoderma at the end of therapy in 7, jaundice in 1, peripheral neuritis evidenced by paresthesias in the lower extremities during the second or third week following therapy in 18, nausea and vomiting (more often in the female) in 29, slight pain of a cramplike nature in the arm and forearm of the injected extremity in practically every patient, a moderately severe local thrombophlebitis of the forearm (usually on the fourth or fifth day of therapy) in 8, a leukocyte count falling to less than 5,000 at the end of therapy or shortly thereafter in 2, late secondary anemia, which usually reached its peak by the first or second week following therapy in 11, and electrocardiographic changes before, during and after therapy were frequent. The changes were abnormalities of the T waves. Other toxic reactions, convulsions, coma, hemorrhagic encephalitis and exfoliative dermatitis, were not observed. Nineteen of the 33 patients, receiving thirty-six "treatment courses," have had a complete reversal of their serum. The other patients have been followed for less than six months after therapy. The rate at which the serum of the 19 patients became negative varied from four to twenty-eight weeks after treatment. Four of the 33 patients have been lost for further observation. The serum of 2 of them was negative on the fourth and third week respectively, while the Wassermann reaction of the 2 others had reverted to negative by the ninth week though the Kahn test was still positive. Patients who are retreated do not necessarily acquire any sensitivity to arsenic during the first course of treatment. In fact the toxic reactions seen during the first course of treatment in the 3 patients who were retreated did not necessarily occur with the second course. Two patients became pregnant within eight weeks and fourteen weeks respectively after treatment, at which time their serologic reactions were still positive; no further antisyphilitic treatment was given and both were delivered of normal full term infants.

Electrocardiogram and Massive Arsenotherapy.—Geiger and his associates obtained serial electrocardiograms before, during and after massive arsenotherapy in 23 cases of early primary or secondary syphilis. The changes were concordant diminution of the amplitude of the T wave in all leads, and frequent inversion of the T wave in leads other than the third. The effects were most pronounced toward the end of treatment or immediately thereafter; however, all the changes returned to pretreatment values within a few weeks. The electrocardiographic changes were not related to the Herxheimer reaction, secondary fever or vomiting. It is probable that the abnormalities represented toxic arsenic effects of a transient and benign nature.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

1:247-280 (Feb. 21) 1942

War Surgery of Abdomen. J. Walton.—p. 247.
Arsenic Content of Hair and Bone in Acute and Chronic Arsenic Poisoning: Review of Two Cases Examined Posthumously from Medicolegal Aspect. E. G. Young and R. P. Smith.—p. 251.
*Analysis of Incidence of "Fainting" in 5,897 Unselected Blood Donors. C. L. Greenbury.—p. 253.
Avitaminosis in Apparently Healthy Trinidadians. K. V. Earle.—p. 255.
Psychosis Associated with Vitamin B Deficiency. E. Slater.—p. 257.

Incidence of "Fainting" in Blood Donors.—Greenbury studied the extent that age, sex, occupation, fatigue and lack of food had on the incidence of fainting in 5,897 blood donors (4,137 were female). The combined fainting rate for the sexes was 4.93 per cent. The incidence declined with age for both sexes, excepting for men 36 to 45 years of age. For men less than 45 the rate is significantly greater than for those more than 45, and for women less than 35 the incidence is significantly higher than for older women. Except for the 36 to 45 year group the incidence of fainting is greater among women, and in the 18 to 25 year group the difference reaches statistical significance (more than 20 to 1). The incidence of fainting was higher among clerical workers than among other groups, such as domestics and factory groups. The figures with regard to the effect of hunger and fatigue on the incidence of fainting give little information. However, there is a strong impression that hunger and fatigue are contributory causes. It is not improbable that the high incidence of fainting among clerical workers is due to the fact that because of conscription they are below the normal physical standard.

Glasgow Medical Journal

19:33-56 (Feb.) 1942

*Nonarticular Rheumatism in the Army—Symptomatology, Etiology, Treatment. J. H. Hutchison.—p. 33.

Nonarticular Rheumatism in the Army.—During seven months Hutchison encountered 78 cases of nonarticular rheumatism in a military hospital. Such cases, whatever their nature, are curable and they do not require prolonged hospital treatment. Frequently men with nonarticular rheumatic manifestations are kept off duty too long. In the diagnosis of fibrositis if two of the three signs—well defined tenderness, spasm, nodule formation—are not present it can be assumed that the case is not one of active fibrositis. The average hospitalization period of 54 patients with fibrositis was twenty days, and every patient was returned to duty. Thus, when properly diagnosed and treated, fibrositis should rarely be the cause of prolonged invalidism. Sciatica was less common but more serious; there were 6 cases. True sciatic neuritis can be differentiated from pain of sciatic distribution due to fibrositis by the absence or the diminution of the ankle jerk on the affected side, wasting and hypotonia of the thigh and the calf and occasionally analgesia of the upper and outer side of the foot. The average hospitalization in the 6 cases was thirty-nine days. Rheumatic infection, arthritis or gout was present in the remaining 18 cases. The precipitating factors in fibrositis were sudden strain, wear and tear, infection and sepsis, chilling and psychologic factors. Rest is always necessary in the treatment of fibrositis and sciatica. Heat is an invaluable adjunct for the relief of pain. Massage and heat form the most generally successful treatment for fibrositis. In sciatica massage should be employed cautiously and only in the later stages. Drugs for relieving pain are required in every acute case. The relief of pain following the injection of a local anesthetic in 22 cases was dramatic and rapid, and the power of movement returned. In chronic cases pain and stiffness were lessened. After the injection physical therapy should follow. The injection method may be used as a diagnostic aid, as it does not relieve pain of psychogenic origin.

Journal Obst. & Gynaec. of Brit. Empire, Manchester

49:1-100 (Feb.) 1942

*Pregnancy in Patient with Chronic Hypertension. F. J. Browne and Gladys H. Dodds.—p. 1.
Clinical and Pathologic Study of Permanently Enlarged Uterus. J. R. Goodall, G. T. Altimas and J. E. Ayre.—p. 18.
Dysgerminoma: Complete Report on Case of Bilateral Dysgerminomas Complicating Pregnancy with Malignant Secondary Deposits and Fatal Termination. J. F. Cunningham and J. McGrath.—p. 36.
Arrhenoblastoma: Case. W. K. McIntyre.—p. 41.
Diabetes Insipidus in Pregnancy: Case. H. C. McLaren and M. McLeod.—p. 51.
Superinvolution of Uterus Following Intrapartum Infection with Gas Forming Organisms. T. E. Lennon and B. Williams.—p. 59.
Categories of Abortion and Abortion-Stillbirth Sequences. P. Malpas.—p. 65.
Vaginal Calculus. F. R. Stansfield.—p. 82.

Pregnancy in Patient with Chronic Hypertension.—Browne and Dodds present histories of two hundred and thirty-nine pregnancies in 222 hypertensive patients. Only women under their care before the twentieth week of pregnancy are considered. Exacerbation, albuminuria, edema and the like occurred in 17.9 per cent of the pregnancies. If a rise in blood pressure from that before pregnancy alone or with edema were taken as evidence of exacerbation, this occurred in 82 per cent. There was no exacerbation in 17 per cent. There was no evidence that patients in whom an exacerbation occurred with albuminuria, edema and other signs of preeclamptic toxemia were suffering from occult or latent nephritis or that their underlying hypertension was fundamentally different from that in those who had no exacerbation or from those who had a further rise in blood pressure. Exacerbation seemed more likely in patients 30 or more years of age than in those less than 30. The fetal and neonatal mortality was 16.2 per cent. Intrauterine death of the fetus was often preceded by albuminuria, but it also occurred when albuminuria was absent, especially if the systolic blood pressure rose to 160 or more millimeters. The same was true of spontaneous abortion and premature labor. If a patient's blood pressure at the start of her pregnancy was 150 systolic and 100 diastolic she had a 32 per cent likelihood of a successful pregnancy and of giving birth to a living and viable child. Tests of renal function were of little prognostic aid. The most valuable seemed to be the blood urea. If at the start of pregnancy this was 30 or more mg. per hundred cubic centimeters, the chance of a living and viable child was small.

Practitioner, London

148:129-192 (March) 1942

Hemorrhage in Obstetrics. C. Moir.—p. 129.
Puerperal Pyrexia. D. Baird.—p. 134.
Indications for Cesarean Section. L. Phillips.—p. 139.
Obstructed Labor. R. C. Brown.—p. 151.
Mental Disorders in Pregnancy and Puerperium. I. Skottowe.—p. 157.
Standardization of Treatment of Arthritics. R. Pemberton.—p. 164.
*Water Deficiency in General Practice. R. H. Micks.—p. 172.
Minor Surgery: VIII. The Feet. H. L.-C. Wood.—p. 177.

Water Deficiency in General Practice.—Micks states that the general practitioner, although he rarely treats dehydration, may by intelligent anticipation often prevent it from reaching the stage at which intravenous infusion is necessary; for example, when the administration of sulfapyridine has to be pushed to the extent of producing vomiting, measures to combat dehydration can be instituted at an early stage. The parenteral administration of saline solution to such patients maintains a high output of urine. Infantile diarrhea rapidly produces collapse. In such cases the only satisfactory route may be the intravenous one and a matter for experts, and the practitioner who saves most cases of infantile diarrhea anticipates the need for special treatment by sending his patients early to a properly equipped children's hospital. The practitioner may have to treat diabetic coma in the patient's home. Some hundreds of units of insulin may be needed in a short time, with saline solution rectally or orally, and he must resolve not to leave the house until recovery has begun. Diabetic coma is best treated in the hospital, but when this treatment is not available even an inexperienced practitioner can do much if he remembers that the two "specifics," insulin and isotonic solution of sodium chloride, should be given at once in abundance. Hypoglycemia need not be feared at first, as it takes many hours and much insulin to produce hypoglycemia in a comatose patient.

Zeitschrift für Vitaminforschung, Berne

12:1-192 (Nos. 1/2) 1942. **Partial Index**

Specificity of Histochemical Demonstration of Vitamin C According to Giroud and Leblond. G. Wolf-Heidegger and H. Waldmann.—p. 1.
Appearance of Strong Reducing Substances in Kupffer's Star Shaped Cells of Rat Liver Following Extirpation of Adrenals. G. Wolf-Heidegger.—p. 24.
Problem of Minimum Protein Requirements. I. Abelin and E. Rhyn.—p. 56.
New Method of Determining Vitamin C in Blood. J. J. Schenk.—p. 80.
*Influence of Cooking Utensils on Destruction of Vitamin C. A. Fleisch.—p. 86.
Synthesis of Vitamin C in Human Infants. P. Rohmer and N. Bezssonoff.—p. 104.
Modification of Prothrombin Deficiency of Blood in Dog with Biliary Fistula by Means of Administration of Vitamin K. S. Thaddea and G. Frost.—p. 134.

Influence of Cooking Utensils on Destruction of Vitamin C.—Fleisch determined by titration the loss of vitamin C in milk, potatoes, kohlrabi, cauliflower and apricots caused by cooking in different types of kitchen utensils. A noticeable influence is already exerted by the length of time required until the boiling point is reached. The longer the time, the greater the destruction of vitamin C. Since pyrex has a poor heat conduction capacity, its destruction of vitamin C is greater than is the case in aluminum utensils. The destruction of oxydases by the cooking process does not prevent or reduce the destruction of vitamin C after the cooking process. This was ascertained over a period of twenty-four hours. When milk is heated in utensils of various materials for the same length of time, vitamin C destruction is least in pyrex; then follow aluminum, well tinned copper utensils, enamel ware, enameled cast steel and badly tinned copper. However, if the utensils of various materials are heated with the same flame intensity and if cooking of the food is continued to the same degree of doneness, poorly tinned copper, pyrex, enameled cast steel, double boiler and particularly the fireless cooker all destroy more vitamin C than does aluminum. This applied to all the aforementioned foods.

Bol. de la Asoc. Méd. de Puerto Rico, Santurce

34:41-78 (Feb.) 1942. **Partial Index**

*Diethylstilbestrol Dipropionate in Hyperplasia of Prostate. J. E. Colon.—p. 41.

Diethylstilbestrol Dipropionate in Hyperplasia of Prostate.—Colon treated 9 cases of benign prostatic hyperplasia by intramuscular injections of diethylstilbestrol dipropionate. One mg. in oil was administered for six injections. In 2 cases of fibrous and fibromuscular hyperplasia, respectively, the first series of injections was followed by a second series of weekly injections of 3 mg. for five injections. The patients were treated at the same time with prostatic massage. In 5 cases the size of the prostate gradually diminished to normal. The patients void normally and show no residual urine or prostatic symptoms. The size of the prostate diminished in the 2 cases of hyperplasia with fibrosis and fibromuscular prostatic disorder, respectively. They void without difficulty but show some residual urine. All the patients were observed for several months after conclusion of the treatment and were found to be relieved of the symptoms.

Münchener medizinische Wochenschrift, Munich

88:949-976 (Aug. 29) 1941. **Partial Index**

Chemical Disinfectants. M. Waldhecker.—p. 949.
Interrelations Between Vitamins. H. Schroeder and J. Kühnau.—p. 954.
*Treatment of Bronchial Asthma with Spinal Puncture and Insulin. H. Graeber.—p. 955.
Investigations on Hereditary Biologic Factors in Development of Homosexuality. T. Lang.—p. 961.
*Eosin in Local Treatment of Psoriasis Vulgaris. R. Wernsdörfer.—p. 965.

Spinal Puncture and Insulin in Treatment of Bronchial Asthma.—Graeber points out the importance of differentiating between the treatment of the acute attack and the interval stage of asthma. Spinal puncture can be employed only in the acute attack. The method was employed two decades ago by Schultz, who assumed that the hydrostatic pressure conditions in the central nervous system may play a part in bronchial asthma. The author has practiced spinal puncture so far in 13 cases of the allergic type without an essential cardiac component. The amount of fluid withdrawn varied between 15 and 25 cc., depending on the pressure. Favorable results were obtained in 7 of the 13 cases. Improvement was obtained in 3 cases, and the puncture was without any effect in the remaining 3. Spinal puncture should be employed only after the customary symptomatic remedies have failed. Repeated punctures offer little prospect of success. The mode of action of spinal puncture has not been explained. Insulin therapy was resorted to in 3 cases. Insulin has two distinct effects on the asthmatic patient. Protracted treatment with gradually increased doses has little effect on the bronchial asthma as such but exerts a favorable effect on the general condition and indirectly on the asthma. Insulin therapy here is employed as an adjuvant in every stage of asthma. The general condition is the decisive factor in the selection of patients for this treatment. The second form is insulin shock therapy with large intravenous or intramuscular doses. This is a formidable procedure and should be resorted to only in cases refractory to all other forms of treatment. Intercurrent infections with high fever (facial erysipelas, lacunar tonsillitis and pneumonia) effected cure in 3 severe and refractory cases of asthma.

Eosin in Local Treatment of Psoriasis Vulgaris.—Wernsdörfer employed a mixture of eosin, chrysarobin and salicylic acid, either in an ointment base or in alcohol, in the treatment of patients with psoriasis. This was followed by irradiation with ultraviolet rays, at a distance of 60 cm., on the first day for five minutes but on later days for eight or ten minutes. This method is more effective in a much shorter time than the customary medicaments. The photodynamic action of eosin is discussed.

Wiener klinische Wochenschrift, Vienna

54:833-852 (Oct. 10) 1942. **Partial Index**

Pathogenesis and Prophylaxis of Tuberculosis in Childhood. F. Hamburger.—p. 833.
Bilateral Pneumothorax. V. Ćepulić.—p. 837.
Laryngeal Tuberculosis. E. Wessely.—p. 841.
*Changes in Pulmonary Vessels in Pneumonia. M. Fossel.—p. 843.

Changes in Pulmonary Vessels in Pneumonia.—Fossel shows that in the course of pneumonia pulmonary vessels, particularly the arteries, may develop inflammatory processes, which lead to partial destruction of the wall and to narrowing of the lumen partly by endarteritic proliferation and partly by fibrin deposits and formation of thrombi. Such arterial changes have been observed in influenzal pneumonia and in the partial purulent breakdown of pulmonary tissue. Little attention has so far been given to the arterial inflammation which recurs after pneumonia has resolved. These changes are of vital importance for the function of the pulmonary circulation. Pneumonia accompanied by extensive interstitial inflammations on the arteries has a high mortality, but occasionally the patient survives. The majority of such patients have residual lesions left by the pneumonic process, such as pleural adhesions, callous indurations of the interstitial connective tissue and even carnification. In such instances it is not difficult to establish a relationship between the old vascular changes and the pneumonia. The author had the opportunity of examining such cases. He detected old cicatrized arterial lesions with chronic aneurysmatic dilatations and partial regeneration of the muscularis which recall the picture described by Jaeger as the healed form of periarteritis nodosa. There are also cases in which the pulmonary parenchyma exhibits no permanent changes and in which, except for the thickening of the interstitial tissue, the old vascular changes give the impression of an independent lesion. Cases of severe stasis in the pulmonary circulation are erroneously ascribed to an obscure, apparently independent, disease of the peripheral pulmonary arteries. Many cases which have been designated as primary pulmonary sclerosis, isolated endarteritis pulmonalis or thromboarteritis pulmonalis can be identified as an old and occasionally a relapsing pneumonic arterial lesion. Not all such cases can be traced to a previous pneumonia. Other conditions that can elicit these or similar pictures are hematogenic-purulent, rheumatic or syphilitic inflammations of the vascular wall, periarteritis nodosa and Winiwarter-Buerger's endarteritis obliterans.

Book Notices

Advances in Colloid Science. Edited by Elmer O. Kraemer, Ph.D., Biochemical Research Foundation of the Franklin Institute, Newark, Delaware. In collaboration with Floyd E. Bartell, Ph.D., Professor of Chemistry, University of Michigan, Ann Arbor, and S. S. Kistler, Ph.D., Associate Director of Research, Norton Company, Worcester, Mass. Volume I, Cloth. Price, $5.50. Pp. 434, with 161 illustrations. New York: Interscience Publishers, Inc., 1942.

It is unfortunate that a book such as this, possessing world-wide interest and for which subject matter should be drawn from all countries, must be published when political conditions limit the sources. Nine of the twelve contributions emanate from American laboratories; all are written by competent leaders in each field described.

This collection of papers is not proposed for use as a text-book nor is it a general survey of the field of colloid chemistry. Rather, it is a series of subjects related to one another only in that each is a manifestation of colloidal phenomena. The authors give the detailed theoretical and experimental background for their subjects, description of results, comparison with theoretical results and conclusions regarding the value of the experiments. The papers are not reviews or compilations from the literature but represent original, individual work.

P. H. Emmett describes a method and apparatus for the determination of surface areas of particles by adsorption isotherms, while R. R. Sullivan and K. L. Hertel use the permeability method to determine surface area of fibers and powders. A. Tiselius gives a modification of adsorption analysis based on the determination of specific retardation volumes. The theory of detergency and comparisons of commercially available detergents under varying conditions is given by J. W. McBain. An excellent review and discussion of recent work on the structure, physical and chemical properties, enzymatic degradation and color reactions of starch is given by K. H. Meyer. R. E. Powell and H. Eyring discuss the theoretical frictional and thermodynamic properties of large molecules such as cellulose derivatives and rubber. Conclusions concerning the structure of certain inorganic gels as derived from x-ray diffraction data are presented by H. B. Weiser and W. O. Milligan. A study of the creaming of latex, so important when many substitutes for hevea rubber are being sought, is presented by G. E. Van Gils and G. M. Kraay. The phenomenon of the production of double refraction during stress or movement of certain liquids, such as colloids, known as streaming birefringence is excellently described and conditions are discussed by J. T. Edsall. Zeolites and permutits have been used for many years in the purification of liquids, such as boiler feed waters, because they possess ionizable groupings which may be exchanged for metallic ions in solution. It has now been found that certain synthetic resins also possess this property of ion exchange, thus opening a great new field in liquid purification. This problem and the possibilities of the method are presented by R. J. Meyers. No book on colloids would be complete unless it included applications of the electron microscope, which can magnify an object thirty thousand times, to this type of work. T. F. Anderson describes the mechanics, use, technics and some of the results obtained with the instrument.

The average reader who has not had specific training in the field of colloids may find the mathematical and theoretical treatment rather confusing, but one who is working or deeply interested in these subjects will find this collection of papers invaluable. The basic theorems in each case are sound, the bibliography is adequate, and the printing and illustrations are excellent.

Shock Treatment in Psychiatry: A Manual. By Lucie Jessner, M.D., Ph.D., Resident Psychiatrist, Baldpate, Georgetown, Mass., and V. Gerard Ryan, M.D., Associate Psychiatrist, Elmcrest Manor, Portland, Conn. Introduction by Harry C. Solomon, M.D., Clinical Professor of Psychiatry, Harvard Medical School, Boston. Cloth. Price, $3.50. Pp. 149. New York: Grune & Stratton, Incorporated, 1941.

This is a useful manual giving explicit directions for the administration of shock therapies for mental disturbances. It is valuable for those who plan to use these therapeutic procedures.

Fatigue of Workers: Its Relation to Industrial Production. By Committee on Work in Industry of the National Research Council. Cloth. Price, $2.50. Pp. 165. New York: Reinhold Publishing Corporation, 1941.

Present day events emphasize the importance of maximum production in industry. This monograph is concerned with some of the factors responsible for fatigue in industrial workers. Although it was written before the outbreak of the war, it is nonetheless up to date. The last decade has witnessed a rapidly accumulating literature and interest in this nationally important problem. The material is presented in a rather interesting manner representing "the testimony" presented before the committee. Testimony in this sense implies a report to the committee and by members of the committee of the accumulated knowledge on certain phases of this subject.

The monograph has value because it indicates in broad terms the complexities of industrial fatigue. It gives special emphasis to some of the physical, psychologic and sociological factors. Of importance to the medical profession is the summary by Dill of the effect of heat and high altitude. Dill's investigations were derived from an intensive study of the circumstances of work at Boulder Dam, but the findings can be applied and have been applied to other circumstances of industry, such as obtain in steel mills and other places where high temperature is a factor. The likelihood of our military forces being occupied in tropical climates makes these studies important now. Studies on high altitude are included in this chapter and represent chiefly the results of investigations at Columbia University and in Chile. These investigations give some idea of the problems affecting aviation medicine.

Psychologic influences on industrial fatigue are illustrated chiefly by case reports and summary comments. The effect of social and psychologic environment is presented in the investigations carried on for many years in the plant of the Western Electric Company. The latter chapters are illuminating for any one who desires a comprehension of the many aspects of the fatigue problem.

This monograph serves to emphasize the increasing importance of engaging the attention of the medical profession, from the point of view of the practitioner and of the research investigator, for the alleviation of fatigue. It indicates the significance to the medical profession of the influence of social, economic and psychologic factors on national health. The medical profession cannot remain aloof from this problem.

Socorro médico aéreo en ortopedia y traumatología. Por Julio Piñeiro Sorondo, profesor adjunto de ortopedia de la Facultad de ciencias médicas de Buenos Aires. Prólogo del Profesor Enrique Finochietto. Paper. Pp. 172, with 58 illustrations. Buenos Aires: Imprenta Sebastián de Amorrortu e Hijos, 1941.

This is a well conceived and excellently written book. Its publication at this time is extremely opportune, since the world is just beginning to realize how extremely small is our knowledge of medical aid by air. It is not designed for the research worker in aviation medicine but should be compulsory reading for all medical men in charge of civilian defense or relief agencies such as the Red Cross or Relief Wings.

The book divides naturally into four parts. The first consists of two chapters, one an introduction in which unfamiliar terms and expressions are defined, and the other the history of the part played by South America and France in the development of this powerful ally in the struggle against death and disease. The second part is in three chapters, the first of which deals with the effect of flight on the patient from the point of view of a physicist. The second chapter is an adequate consideration of the prevention of anoxia and apnea. The third chapter considers the indications and contraindications for the transportation of patients by air. Quite properly the author has been strongly influenced by Leduc's 1934 Paris thesis and Hippke's report of the transportation of wounded from Poland. Yet he has maintained his equilibrium and takes his stand somewhere between those two and at about the point occupied by the British and ourselves.

The third part of the book deals with the choice of the airplane, its equipment and its pilot. These three chapters are by far the most important in the book, since they contain most of the new material to be found therein. The author is to be

congratulated on the carefully tabulated lists and illustrations, which must have been boring to prepare but which are so necessary to one about to embark on a study of air ambulances and air borne patients.

The closing three chapters are devoted to the position and progress of medical aid by air in Argentina.

The Problem of Tumours: The Application of Blastogenic Agents to Ciliates. A Cytoplasmic Hypothesis. By J. C. Mottram, M.B., Director, Research Department, Mount Vernon Hospital, Northwood. Boards. Price, 7s. 6d. Pp. 91, with 33 illustrations. London: H. K. Lewis & Co., Ltd., 1942.

Cancerigenic agents, e. g. cyclic hydrocarbons, radiations, heat and hypertonic solutions, have no chemical or physical properties in common that can explain their effects on cells. The author set himself the task of studying the response of cells to cancerigenic agents in order to determine, if possible, whether such response represents reactions common to many kinds of cells. The monograph deals with the changes in paramecial cells on exposure to cancerigenic agents. Exposures to such agents gave rise to abnormal cells which the author is inclined to regard as the equivalents of cancer cells. Because the changes from the normal seemed to involve primarily cytoplasm, the author speaks of a cytoplasmic hypothesis of cancerigenic action. It is noteworthy that in his cultures the abnormal cells gave rise to normal as well as to abnormal cells and hence had the power to revert to the normal. So far as is now known, such reversion does not occur in cancer cells. The monograph will interest especially students and investigators of fundamental cytologic problems.

A Hand-Book of Ocular Therapeutics. By Sanford R. Gifford, M.A., M.D., F.A.C.S., Professor of Ophthalmology, Northwestern University Medical School, Chicago. Third edition. Cloth. Price, $4. Pp. 410, with 69 illustrations. Philadelphia: Lea & Febiger, 1942.

When the ophthalmologic profession accords to a book the wholehearted welcome that greeted the first edition of this work it throws on the author the moral obligation of periodic revision in order that the textual material may be kept abreast of modern advances. Unfortunately, many authors do not recognize this obligation and our reference shelves and libraries are cluttered with antiquated volumes that tend to confuse the earnest searchers for truth. The profession may well rejoice that Gifford is well aware of the faith placed in his writings and continues to justify that faith by the careful preparation of the well thought out and revised third edition. In this some of the earlier material has been deleted and the space filled with careful descriptions of the therapeutic advances of the past four years. But the telling of the therapeutic measures is the minor aspect; the evaluation is the major. Gifford presents a fair estimate of just how good these recent measures are, based on the writing and personal word of expert clinicians and backed by his own extensive experience. That personal touch is what lifts the book out of the ranks of the ordinary.

Anoxia: Its Effect on the Body. By Edward J. Van Liere, Ph.D., M.D. Cloth. Price, $3. Pp. 269, with 17 illustrations. Chicago: University of Chicago Press, 1942.

This book is one of the first to study the effect of anoxia on the various systems of the body. Its author is to be congratulated not only on his concept but also on his diligence in searching out the literature on the subject. He not only produces much new evidence but indicates many new lines of investigation. It is amazing that so much material could be compressed into so small a volume and yet maintain clarity. Any new departure in treating such a complex subject is certain to show some of the roughness of pioneer work. For instance, the method of presenting references could be improved on, and the index needs more expansion and cross references. Confusion also arises from the fact that many of the authors that he quotes did not fully appreciate the difference between mountain sickness and chronic altitude sickness. Nevertheless the book is a useful one and serves as an excellent introduction to aviation medicine as well as a magnificent reference work for the entire subject of anoxia.

Obstrucción de la vena central de la retina. Por el Dr. Federico Carlos Cerboni. Tesis, Universidad nacional de Buenos Aires, Facultad de ciencias médicas. Paper. Pp. 102, with 17 illustrations. Buenos Aires, 1941.

The author, in his graduation thesis for the University of Buenos Aires, reviews the anatomy, histopathology and history of clinical observation covering obstruction of the central vein of the retina and reports his findings in 4 cases. The illustrations are chiefly photographs of fundus conditions. Various theories of pathogenesis are reviewed. While arteriosclerosis seems to be the most common factor, the condition in a certain number of cases is due to syphilis and in others to inflammation in or about the vein resulting from foci of infection in the teeth, tonsils or elsewhere. Of the author's 4 cases, arteriosclerosis with hypertension was present in 3, while, in the other, syphilis was considered probable, the patient being 38 years of age with a positive Kahn reaction. This was the only case in which improvement occurred, vision returning to 2/3 after three months. Secondary glaucoma occurred in 1 of the cases, but surgery was not required, as the eye remained free from pain. The only treatment given in the author's cases was acetylcholin, dietary measures and ethylmorphine hydrochloride, with miotics in the case in which glaucoma developed and antisyphilitic treatment in the case due to syphilis. In his review of therapy, the recent cases treated with heparin are discussed. Complete recovery of vision has occurred in only a few cases, 7.5 per cent according to Wessely. Glaucoma develops in from 13 to 23 per cent of cases and is especially difficult to control. The tension at the onset is usually below normal in the affected eye, the difference between the two eyes varying from 2 to 9 mm. in the author's cases. According to Wessely the prognosis is less favorable in cases with a more marked difference in tension between the two eyes. It is less favorable in patients with higher blood pressure and more favorable in younger patients. The second eye is involved in approximately 6 per cent of cases, and Moore's statistics indicate that 41.6 per cent of affected persons die within six years as a result of cerebral vascular accidents. There is a bibliography.

Trastornos cardiacos en los estados anémicos: Contribución clínica y experimental a su estudio. Por el Dr. Eugenio R. Pietrafesa. Tesis de doctorado, Universidad nacional de Buenos Aires, Facultad de ciencias médicas. Paper. Pp. 209, with 127 illustrations. Buenos Aires: Estudio de Artes Gráficas "Futura"; Libreria "El Ateneo," 1941.

This monograph is based on an analyses of 20 clinical cases and experiments on 17 rabbits. The author's conclusions fall in line with the generally accepted point of view. He describes the clinical, roentgenographic and electrocardiographic alterations in the heart in anemia, and the changes induced in rabbits by hemorrhage as regards both the electrocardiogram and the microscopic appearance of the heart post mortem. He attributes the changes in the heart as primarily due to coronary insufficiency and submits a table subdividing the various varieties of coronary insufficiency to be encountered clinically on a systematic basis and places anemias in their proper location. Throughout this well documented report the author's findings are intelligently integrated with the findings in the literature. References are made to two hundred and seventy-three previous publications in the world's literature. This is a meritorious contribution to the subject in the Spanish language.

The Jamaica Hospital: A History of the Institution 1892-1942. Written and Compiled by F. G. Riley, M.D., Historian of the Medical Board. The Jamaica Hospital, Jamaica, Long Island, N. Y. Cloth. Price, $5. Pp. 172, with 20 illustrations. Jamaica, 1942.

An intimate story of an institution and those who guided it through many years, told in a most interesting way. This story of the Jamaica Hospital "starts in the early eighties, the period of the horse car, the plank roads, toll gates, the high wheeled bicycle and the volunteer fire department. It progresses through the 'Gay Nineties,' the coming of the trolley, the telephone, the graphophone, the safety bicycle and the horse racing on Hillside Avenue on Sundays and holidays, and then into the early 1900's and the coming of the automobile, the fine new roads." The printing and binding are exceptionally well done, and the reading of the book is as pleasant to the eye as it is to the mind.

Queries and Minor Notes

THE ANSWERS HERE PUBLISHED HAVE BEEN PREPARED BY COMPETENT AUTHORITIES. THEY DO NOT, HOWEVER, REPRESENT THE OPINIONS OF ANY OFFICIAL BODIES UNLESS SPECIFICALLY STATED IN THE REPLY. ANONYMOUS COMMUNICATIONS AND QUERIES ON POSTAL CARDS WILL NOT BE NOTICED. EVERY LETTER MUST CONTAIN THE WRITER'S NAME AND ADDRESS, BUT THESE WILL BE OMITTED ON REQUEST.

VITAMIN D AND HEALING OF LESIONS OF PULMONARY TUBERCULOSIS

To the Editor:—**I should like to know the current opinion with regard to the role of vitamin D in the utilization of calcium during the healing of a tuberculous pulmonary lesion. I am at present a patient in a sanatorium where the diet, while otherwise well balanced, could not possibly contain more than a very small variable quantity of vitamin D. The calcium intake is adequate, mostly in the form of whole milk. The average adult patient does not receive any supplementary form of vitamin D, and adult bed patients are not exposed to the sun. If the normal individual who usually gets a certain amount of solar irradiation requires a daily intake of 625 units of vitamin D, would it not be reasonable to suppose that a patient with a tuberculous lesion, which so often heals by calcification, would require at least the average normal adult dosage? As far as I know in the usual sanatorium diet this could be accomplished only by the addition of some supplementary form of vitamin D. Is the administration of fairly large doses of vitamin D to adult bed patients a common practice in sanatoriums or is it regarded as unimportant?**

Michael F. Flatley, M.D., Weimar, Calif.

ANSWER.—Although vitamin D has been given empirically for a long time in the form of cod liver oil, there is a dearth of accurate knowledge regarding any specific effect it may have on human tuberculosis.

It would seem that benefits from cod liver oil and like products are due to its food value, vitamin A as well as vitamin D. Knudson and Floody (Fat as a Factor in Healing of Rickets with Vitamin D, *J. Nutrition* **20**:317 [Oct.] 1940) showed that 5 per cent fat enhances the effect of vitamin D in healing. Any work done on cod liver oil, therefore, cannot be accepted as final proof of a vitamin D effect. Work on pure vitamin D is relatively scarce.

The discussion of the problem therefore will be largely hypothetic, as experiments on tuberculous patients have been too few and the reported results too equivocal to have any practical significance. Spies and Glover (Renal Lesions with Retention of Nitrogenous Products Produced by Massive Doses of Irradiated Ergosterol, *Am. J. Path.* **6**:485 [July] 1930) and Crimm, Strayer, Watson and Heimann (The Effect of Viosterol on the Absorption and Retention of Calcium, *Am. Rev. Tuberc.* **28**:202 [Aug.] 1933) reported that vitamin D caused tubercles to calcify better in human tuberculosis. McClung and Glickman (Vitamin D Milk in Pulmonary Tuberculosis, Bull. 11, U. S. Vet. Admin., 1934, p. 26) reported greater improvement in tuberculous patients receiving vitamin D than in a control group. On the other hand Grayzel, Shear and Kramer (Vitamin D in Bone Tuberculosis in Children, *Am. Rev. Tuberc.* **24**:106 [Aug.] 1931) found no advantage if the diet was balanced.

In animal experiments, little or no favorable results have been reported. Trevorrow, DeSavitsch, Black and Lewis (Effects of Prolonged Viosterol Administration and of Artificial Sunlight Radiation on Experimental Tuberculosis in Rabbits, *Proc. Soc. Exper. Biol. & Med.* **31**:802 [April] 1934), Steenken and Baldwin (Effect of Irradiated Milk Compared with Vitamin D Oils on Inhalation Tuberculosis of Guinea Pigs, *Am. Rev. Tuberc.* **35**:656 [May] 1937) and Steiner, Greene and Kramer (Effects of Vitamin D Deficiency on Experimental Tuberculosis in Rabbits, *ibid.* **35**:640 [May] 1937) found no favorable effect in animal tuberculosis. Grant, Suysnaga and Stegeman (Effect of Rachitic Diets on Experimental Tuberculosis in White Rats, *ibid.* **16**:628 [Nov.] 1927) showed a definite value of vitamin D, but not without balancing up other vitamins and minerals. A certain balance with vitamins A and C and calcium and phosphorus seemed to result in prolongation of the lives of guinea pigs.

All we are justified in concluding is that vitamin D does not affect the tuberculous lesion itself directly but perhaps produces favorable results in its role as a mobilizer of the serum calcium, which in turn tends to prevent a progression of the disease. In the presence of adequate calcium and phosphorus (and perhaps parathyroid hormone) vitamin D seems to allow a better absorption of calcium from the intestine. A deficiency of any of the three will affect the metabolism of the others. Likewise an excess of any one of the three, with a deficiency of any of the others, will have an equally unfavorable effect. High vitamin D, for instance, in the presence of low calcium and phosphorus, actually robs the bones of calcium to keep the serum level up. Vitamin D, calcium and phosphorus levels must therefore be maintained, as otherwise there will be a depletion of calcium, which is necessary for general metabolism even if it has no specific effect on the tuberculous process.

The problem of calcification itself in tubercles usually comes only after the battle has been won and the fibrous capsule produced. The important requirement in tubercle encapsulation (formation of collagen in connective tissue) is perhaps more dependent on vitamin C than on vitamin D.

The unfavorable effect of vitamin D deficiency seems, therefore, to be a late indirect effect more than anything specific. Any ill results probably come only after there is an imbalance of other vitamins and minerals resulting in a decrease of the calcium absorption and lowering of calcium in the blood. This would tend to increase cell permeability (Petersen, W. F., and Levinson, S. A.: Skin Reactions, Blood Chemistry and Physical Status of "Normal" Men and of Clinical Patients: VII. Study of Eighty-Three Tuberculous Patients, *Arch. Path.* **9**:295 [Jan.] 1930) and enhance the development of allergy, exudation and progressive disease (Goldberg, Benjamin: Medical, Symptomatic and Tuberculin Therapy: Specific Therapy, in his Clinical Tuberculosis, Philadelphia, F. A. Davis Company **1**:C-75, 1939). The later effects (calcification, ossification and so on) probably take place after the crucial struggle has been ended.

The conclusions therefore are that vitamin D is an important link in the chain of favorable metabolic adjuvants and not only should be kept up to a standard level but also should be balanced with other important vitamins (vitamins A, B, C) and minerals, especially calcium and phosphorus in the form of bone meal or similar products, to avoid a deterioration in the defensive mechanism against any infection, including tuberculosis. The evidence at hand, however, fails to support an active specific effect on tubercles or the disease tuberculosis.

The last question may be answered "yes," but vitamin D is too often given in "shotgun dosage" of cod liver oil or in capsules rather than being made a problem of scientific dietetics.

PROBABLE KIDNEY STONE

To the Editor:—**A white man aged 37 complains of attacks of severe pain over the left loin, headaches, backache and nervousness. Since the acute onset, January 14, he has had three attacks with pains radiating to the left testis and frequency of urination. A penile "blister" was noted twenty years ago but no dark field examination was done; the lesion was cauterized and no further treatment given. He has had repeated negative blood Wassermann reactions. Examination revealed a sluggish facies, pulse rate 80, temperature 98.6 F., blood pressure 126 systolic and 70 diastolic, head normal. The right pupil is slightly larger than the left and shows but little reaction to light, though it reacts to accommodation. The ears, nose and throat are normal. The heart apparently is not enlarged and the sounds are normal; the chest is clear. The kidneys were not palpable, and the pain diffused over the left side is not localized. There is an atrophied left testis (said to be due to mumps) but no evidence of a penile scar. There is a small herniation through the left inguinal ring. The extremities are normal; the knee jerks are active; there is past pointing on the finger to nose test and a slight swaying on the Romberg test. Urinalysis gave negative reactions for albumin and sugar but 5 to 6 blood cells and 3 to 4 pus cells per high power field. The prostate was adenomatous and normal in size; the seminal vesicles were palpable and tender bilaterally. On cystoscopic examination, slight edema and congestion were seen near the left ureteral orifice, but a number 5 catheter passed to each kidney with ease. Indigo carmine appeared from the left kidney in four minutes and blue in six and from the right in four minutes and blue in seven. A specimen from the right kidney was loaded with blood cells and 2 to 3 pus cells per high power field. Urine from the left kidney was loaded with blood cells and one pus cell per high power field. A roentgenogram with catheters in situ revealed no evidence of stone. Skiodan pyelograms (retrograde) revealed kidneys normal in size, position and outline. There is a tendency to a bifid pelvis on each side and some blunting of the calices of both kidneys. A diagnosis of chronic pyelonephritis and seminal vesiculitis was made. The blood Wassermann reaction was reported negative. A spinal puncture revealed white, clear, colorless fluid under normal pressure, with three cells (two lymphocytes), complement fixation negative, mastic test 21100. Because of a rather severe postpuncture headache, I doubt if permission would be given for a repeat. Would you consider this man's symptoms and findings partly attributable to a latent spinal syphilis and, if so, would you advise treatment?**

M.D., South Carolina.

ANWSER.—From the history, one would be inclined to make a diagnosis of renal colic due to stone. This patient has had several attacks of severe pain over the left loin with pain radiating to the testis, frequency of urination and other classic symptoms of renal calculus. The roentgen examination is negative for stone. However, it is possible that the patient passed the stone before the exposure was made and hence the stone cannot be demonstrated. It may also be possible that the stone is of such density that it cannot be demonstrated with the roentgen ray. It is also possible that the stone rests over a bone and hence cannot be demonstrated. The history is so classic that one would be justified in diagnosing stone from the history alone. Furthermore, cystoscopy revealed edema and congestion

near the left ureteral orifice. This is further evidence of disease in the left kidney. One not infrequently sees these cystoscopic findings after the patient has had a stone or when the stone is in the intramural part of the ureter. The fact that the catheters passed without difficulty or obstruction does not exclude the possibility of stone.

The patient's prostate and vesicles were tender and the fluid could not be examined. Because of tenderness the patient's prostate and vesicles should be massaged at weekly intervals for three weeks and the fluid examined under the microscope for evidence of vesiculitis; namely, pus in the microscopic preparation. Once in a while a patient with seminal vesiculitis has symptoms compatible with renal colic. Seminal vesiculitis is much more infrequently the cause of renal colic than is calculus. Probability is the rule of life; this patient probably has a renal calculus or has passed one. Large amounts of urinary crystals in the urine may produce just this picture. There is enough evidence here to justify a diagnosis of syphilis of the central nervous system, and there would not be much sense in again doing a lumbar puncture.

SKIN BURN AND RHEUMATOID ARTHRITIS

To the Editor:—A white man aged 61 was burned on his face, the upper part of the chest and both hands and arms with strong sodium hydroxide solution. Three weeks after the accident he began to suffer from generalized rheumatoid arthritis, more especially in the shoulders, the fingers and the joints of the lower extremities. For the past five years he had had mild diabetes mellitus. Never before had he had arthritis. Can sodium hydroxide burns of the skin cause rheumatoid arthritis?

Samuel H. Justa, M.D., Rocky Mount, N. C.

ANSWER.—Since the specific cause of rheumatoid arthritis is not known, this question cannot be answered definitely. There seem to be a number of precipitating causes for rheumatoid arthritis. These include acute infections of the respiratory tract, changes incident to the postpartum period, acute chilling, shock and worry. By producing shock and worry, burns of the skin by sodium hydroxide might perhaps serve as a predisposing cause in a person "about ready" to have rheumatoid arthritis, but if so the occurrence is indeed rare and unusual. As far as is known, rheumatoid arthritis is not a recognized complication of any other type of cutaneous burn, even when the burn is extensive.

LEAD POISONING FROM DENTAL BRACES

To the Editor:—What is the possibility of the development in a youth aged 19 of lead poisoning from braces fitted by a dentist? The braces are alleged to have had a lead content of unknown quantity. Has any case of poisoning of this type ever been reported? A professor of biochemistry has found lead chloride in the youth's urine. Would you please state what percentage of lead found in urine would be considered pathologic?

M.D., Georgia.

ANSWER.—Lead poisoning from dental braces has not been reported as far as is known, and braces would be a most unlikely source of the disease. It would be particularly unwise to ascribe any lead absorption to such braces without knowing whether they contained a high concentration of lead. The concentration of lead in the urine which may imply pathologic changes in some cases is considered to be above 0.15 mg. per liter of urine.

IRON THERAPY FOR CHILDREN

To the Editor:—What iron preparation can be used in the treatment of secondary anemia in a 3 year old child? Liquid forms of any kind are not possible because of the taste. Capsules and coated tablets do not seem to be practical. A small ferrous sulfate tablet probably could be used, but I do not know of any such tablet. What is the usual method of iron administration at this age? Liquid forms are principally elixirs, which seem to have too high a percentage of alcohol for the amount of iron necessary.

Stanton S. Eddy Jr., M.D., Middlebury, Vt.

ANSWER.—Iron is conveniently given to children in the form of a solution of ferric ammonium citrate in water. The usual strength of this solution is from 10 to 50 per cent. The amount given is regulated by the strength of the solution and the weight of the child. For example, in a 10 per cent solution the amount given in twenty-four hours is 2 cc. per kilogram of body weight (1 cc. a pound). This may be divided into three portions and conveniently given at meal time in milk. Rarely will a child ever object to the taste. It is just as well to direct the mother to have the child take a drink of water following the iron, and not to continue the treatment longer than a month at a time. This does away with any discussion about staining the teeth.

ESTIMATION OF THE SIZE OF A CUTANEOUS BURN AS RELATED TO THE SURFACE OF THE BODY

To the Editor:—At a recent meeting of the staff of the hospital with which I am affiliated the problem of accurately determining the percentage of the surface of the body that has been involved in a burn was discussed. Some of the men believe that there is some form of table which will show approximately what portion of the body surface is in the arm, hand, thigh, fingers and so on. Each feels that the figures covering the involved portions are too high when the estimates are made by gross visual evaluation. Our group would appreciate any information you have on this subject.

J. M. Feder, M.D., Anderson, S. C.

ANSWER.—The table adopted by the great majority treating burns for determining the approximate portion of the body surface involved has been one outlined by Dr. S. G. Berkow. Dr. Berkow is listed as residing in Perth Amboy, N. J. A reference which should prove valuable is:

Berkow, S. G.: Value of Surface Area Proportions in the Prognosis of Cutaneous Burns and Scalds, *Am. J. Surg.* **11**: 315 (Feb.) 1931.

EPILEPSY AND SELECTIVE SERVICE REGULATIONS

To the Editor:—I should like to know whether army life would be detrimental to a man of 30 who has had epileptic seizures since the age of 7, when he received a blow on the head. He gets these seizures but once in four or five years.

M.D., New Jersey.

ANSWER.—Whether army life will be detrimental or not is a purely academic question. The fact is that the Selective Service regulations place individuals with epilepsy in class 4. Even if the fits occur only once every four or five years, such a classification should be made if it is established that the attacks are of epileptic type and that a severe head injury has been sustained.

INFECTED TONSILS AND DIABETES

To the Editor:—A girl aged 11 was first seen by me on Aug. 31, 1940 for infected tonsils and overweight. She wanted to have them removed. The urine at that time was normal. She then had a cold and I saw her again in April 1941. The urine at that time showed 4 plus sugar; it was not tested for acetone or diacetic acid. She was placed on a diet, which decreased the glycosuria somewhat but she still has 3 plus sugar in the urine. Blood sugar varies from 250 to 400 mg. per hundred cubic centimeters. Her weight has decreased from 128 pounds (58 Kg.) to 117 pounds (53 Kg.). I should like to know if it would be advisable to remove the infected tonsils at this time and by so doing expect an improvement in her diabetic condition.

M.D., Minnesota.

ANSWER.—If the patient is under good diabetic control, free from acidosis or dehydration, there would be no contraindication to tonsillectomy. Infected tonsils may impose an added metabolic stress and decreased tolerance, so that tonsillectomy may be expected to improve her diabetic condition. It would be advisable to wait at least two weeks after the active infection subsides before removing the tonsils. During this time the glycosuria, hyperglycemia and ketonuria, if present, can be properly controlled. If the diabetes is uncomplicated by acidosis, a diet which meets the physiologic needs of the patient should be prescribed. The amount of insulin should then be determined which will keep the blood sugar within a relatively normal range and minimize the glycosuria. A temporary preoperative and postoperative routine to meet the special conditions imposed by the tonsillectomy should be started the night before the operation. The previous regimen can usually be resumed twenty-four hours after the operation.

METHODS OF VACCINATION AGAINST DIPHTHERIA AND SMALLPOX

To the Editor:—I would like to have you answer the following questions if possible: Is it advisable, in view of the fact that only two injections are required, to use alum precipitate diphtheria toxoid in high school instead of the regular toxoid? Is the possibility of severe local reactions enough to counterbalance the time saved in a busy health department? Please discuss the treatment of sterile abscesses after using alum precipitate toxoid. Is the practice of giving smallpox vaccinations in the thigh much more dangerous than that of using the upper arm?

M.D., Oregon.

ANSWER.—In view of the frequency with which severe local reactions occur following the use of two injections of alum precipitate diphtheria toxoid in older children, it would hardly seem advisable to use this method in high school students. For children under 10 years of age, two doses of alum precipitate toxoid, given two to four weeks apart, produced the highest level of diphtheria antitoxin in the blood. In high school students it would appear better to employ two or three doses of plain diphtheria toxoid.

The treatment of sterile abscesses produced by alum precipitate toxoid usually consists in the application of hot wet dressings, incision and draining.

Clinical experience seems to indicate that giving smallpox vaccinations in the thigh is attended by more frequent infection and more severe reactions than when the upper arm is used.